DEFENDER™

Smart Phone Compatible H.264 DVR Security System

4 Channel DVR w/ 4 Indoor/Outdoor Night Vision Cameras

EASY setup

INSTRUCTION MANUAL V1.2

www.defender-usa.com

SN502-4CH

IMPORTANT! PLEASE READ!

NEED HELP?

DO NOT RETURN THIS PRODUCT TO THE STORE

Please contact a DEFENDER customer support representative first regarding any additional information on product features, specifications or assistance with setup.

Please contact us via one of the methods below:

Email:
support@defender-usa.com

Online live web chat:
Visit www.defender-usa.com

Telephone:
1.866.946.7828

Toll free fax:
1.888.771.1701

For more product information visit **www.defender-usa.com**

Note: This is manual version 1.0 for this product, you may find updated versions by visiting our website.

IMPORTANT! PLEASE READ!

PRODUCT WARRANTY INFORMATION

Please visit our website at www.defender-usa.com for information about your product's warranty.

We take quality very seriously. That is why all of our products come with a one year warranty from the original purchase date against defects in workmanship and materials. If you have warranty or support issues please contact us using any of the following methods:

Phone: 1.866.946.7828
Fax: 1.888.771.1701
Email: support@defender-usa.com
Website: www.defender-usa.com

DEFENDER USA
60 Industrial Parkway #Z64
Cheektowaga, NY
USA 14227

DEFENDER CANADA
4080 Montrose Road
Niagara Falls, ON
Canada L2H 1J9

Warranty Terms

1. Defender products are guaranteed for a period of one year from the date of purchase against defects in workmanship and materials. This warranty is limited to the repair, replacement or refund of the purchase price at Defender's option.
2. This warranty becomes void if the product shows evidence of having been misused, mishandled or tampered with contrary to the applicable instruction manual.
3. Routine cleaning, normal cosmetic and mechanical wear and tear are not covered under the terms of this warranty.
4. The warranty expressly provided for herein is the sole warranty provided in connection with the product itself and no other warranty, expressed or implied is provided. Defender assumes no responsibilities for any other claims not specifically mentioned in this warranty.
5. This warranty does not cover shipping costs, insurance, or any other incidental charges.
6. You MUST call Defender before sending any product back for repair. You will be sent a Return Authorization number with return instructions. When returning the product for warranty service, please pack it carefully in the original box with all supplied accessories, and enclose your original receipt or copy, and a brief explanation of the problem (include RA #).
7. This warranty is valid only in Canada and the continental U.S.
8. This warranty cannot be re-issued.

CAUTION

RISK OF ELECTRIC SHOCK, DO NOT OPEN MONITOR

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER (BACK).
NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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INTRODUCTION

Congratulations on your purchase of the SN502-4CH! This user friendly system will allow you to monitor and protect your home or business. The coaching iMenu makes setting up and using your DVR very easy with helpful information bubbles that appear to assist you. The SN502-4CH comes equipped with H.264 compression which allows you to record and store more footage using less space, so you will never miss an important event. This manual was written to ensure that you get the most out of your SN502-4CH DVR.

WHAT IS INCLUDED

DVR (500GB Hard Drive Installed)

4 x Outdoor Night Vision Cameras

4 x Window Warning Stickers

DC12V Power Adapter for DVR

4 x 60ft 4 PIN DIN to RCA (male) Power Cables

10ft RJ-45 Cable

Software and Manual CD

1 x 4 port power supply for Cameras

6 x RCA to BNC Connectors

IR Remote Control

USB Mouse

- 4 x Camera Mounts
- Camera Mounting Hardware
- Quick Start Guide
- Instruction Manual
- RCA to RCA (Male) Cable
- 1 x Power Adapter for Camera
- 1 Year Warranty
- Lifetime Live Customer Support

FEATURES

iPhone and BlackBerry Compatible
Access live video footage directly from your iPhone, BlackBerry[1], Android, Windows Mobile, or Symbian smartphone [2]

Record Over a Month of Footage
The 500GB hard drive is optimized for 24/7 surveillance and uses cutting edge H.264 compression to record over a month of video.[3] Set to record in real time, your footage will stream flawlessly during playback.

Coaching iMenu
Helpful information bubbles will pop up to assist you as you scroll through different settings. Learn what each setting means so that you can configure the system to suit your needs.

Connect to a TV or Monitor Easily
VGA output and "spot" monitoring allow you to connect to up to two televisions and a computer monitor for viewing purposes. This gives you more options when viewing the activity captured by your cameras.

LIfetime Live Customer Support
Our customer support team can be reached by phone, by email and live web chat. Our experts will be happy to assist you in English, French and Spanish.

View Video Online with No Service Fees
View your DVR's live or recorded video footage on any Internet accessible computer[5] with Internet Explorer.[6] Know what is happening at your home or business wherever and whenever you want.

Customize Your Camera Display
Picture-in-picture allows you to view one camera in full screen and two other cameras of your choice in smaller windows simultaneously. You can also watch all four cameras at once in quad screen mode or cycle through each camera in sequence mode.

4 Professional Grade Weather Resistant Cameras
Four color cameras provide you with a clear, consistent picture at 400 TV lines of resolution. Each camera is built with professional grade aluminum housing and a sunshade to help prevent glare, deterioration and rusting.[8]

See in the Dark with Automatic Night Vision
Each camera comes equipped with night vision, allowing you to see any monitored area (up to 15ft away!)[9] in total darkness. The 11 infrared LEDs activate automatically when it becomes dark and deactivate during the day to save energy.

Multiple Easy Backup Options
A built-in USB port gives you the option of backing up and transferring your video footage with a USB flash drive or external USB hard drive.[10] You can also connect to an external CD/DVD writer directly to your DVR and burn your footage to a disc.

Advanced Motion Activated Recording
Advanced motion detection settings ensure that false alarms are not triggered—the easy motion detection "mask" allows you to block out areas with constant movement.

FEATURES

Included Mouse and Remote
Navigate through the menu with ease using the included USB mouse, the front panel of your DVR or the convenient IR remote control.

Password Protection
Set a password to prevent unauthorized users from viewing your footage or changing any of your DVR settings.

24/7 Scheduled Recording
Choose which days of the week and hours of the day you want to set your DVR to record, or not record. Each individual camera can even have a personalized weekly schedule.

Search by Date, Time or Event
Simply choose the desired date and time range, and the requested video clips will appear. Clips are also labeled by event, which makes it easy to find particular footage.

Endless Location Options with 60ft of Wiring per Camera
The included 60ft camera wiring gives you flexibility in the installation of your cameras and allows you to increase each camera's range. If you need additional 60ft cable lengths, you can purchase the DF10W. The single wire also conveniently carries both the power and video signals, so you are only running one wire per camera (maximum 180ft cable length per camera is recommended).

1. *Compatible with BlackBerry Bold only. For an updated list of compatible models please visit www.defender-usa.com*
2. *iPhone is a registered trademark of Apple Inc. BlackBerry is a registered trademark of Research in Motion Limited. Defender is not affiliated with BlackBerry, iPhone, Windows or Symbian. To see which other smart phone devices are compatible, please visit: www.defender-usa.com.*
3. *Recording capacity may vary based on recording resolution and quality, lighting conditions and movement in the scene. Based on a 500GB hard drive, using lowest quality settings. Defender will not be held liable for any loss of data due to Hard Drive failure.*
4. *Requires broadband router and broadband Internet connection–not included. Internet Explorer is required.*
5. *Video playback software is not Mac compatible*
6. *Internet Explorer is a registered trademark of Microsoft Windows. Defender is not affiliated with Microsoft.*
7. *Sharp is a registered trademark of Sharp Corporation. Defender is not affiliated with Sharp.*
8. *Although the cameras are water resistant they are not waterproof. Cameras are not intended for use in direct exposure to water, rain or snow.*
9. *IR illumination range up to 15ft under ideal conditions. Objects at or beyond this range may be partially or completely obscured, depending on the camera application.*
10. *USB flash drive, CD/DVD writer, and external hard drive not included.*

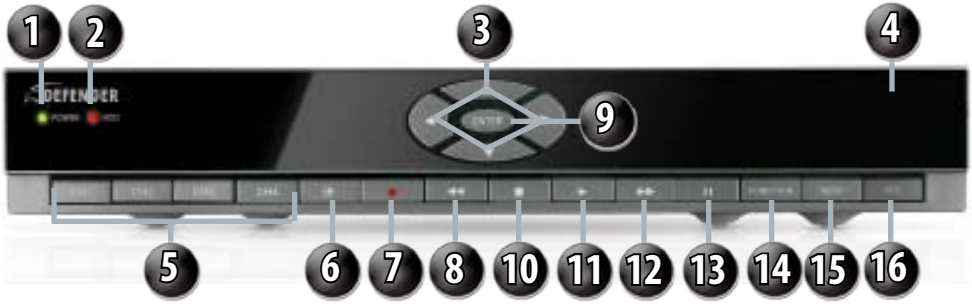
OPTIONAL ACCESSORIES

- DF10W (60 ft. Extension Cable)

For more optional accessories, please see the back of the manual or visit: **www.defender-usa.com**

BUTTON AND CONNECTIONS

DVR FRONT



1. **Power LED:** Glows green when DVR is turned on
2. **HDD LED:** Flashes when hard drive is in use
3. **Directional Keys:** Used to navigate through the menu
4. **IR Sensor:** For the remote control
5. **Channel Selection:** Selects channels to view. Press once to view first channel listed and a second time to view second channel listed
6. **Screen View:** Press once to view quad screen and twice to view single screen
7. **Record:** Press this to prompt manual record
8. **Rewind:** Rewinds playback footage
9. **Enter Button:** Selection button
10. **Stop:** Stops playback footage
11. **Play:** Plays playback footage
12. **Fast Forward:** Fast forwards playback footage
13. **Pause:** Pauses playback footage
14. **Function:** Opens up sub menu
15. **Menu:** Opens up main menu
16. **PTZ:** Opens up PTZ control buttons

DVR BACK

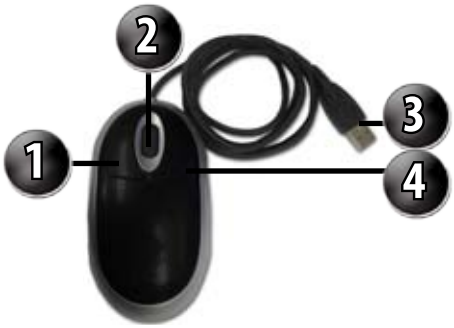
1. **VGA:** Connects to VGA monitor
2. **Mouse:** Connect USB mouse here (before power up)
3. **Camera Connect:** Camera connections for four cameras
4. **Audio Input:** Connects to a microphone and/or audio supported camera (not included)
5. **Power Connection:** Connect DVR to power source with this connection
6. **PTZ:** Connects to two wire PTZ camera
7. **LAN Connection:** Connects to router
8. **USB Connection:** Connect USB drive here to backup footage
9. **Video Output:** Allows you to attach two different monitors
10. **Audio Output:** Connects to speaker/ audio input

BUTTON AND CONNECTIONS

REMOTE CONTROL

1. **Numerical Keypad:** Buttons 1-4 will display the corresponding camera on full screen
2. **All:** Switch to quad viewing mode
3. **Menu:** Access the main menu and exit the current menu
4. **Select/Enter:** Allows you to select options
5. **Directional Keys:** Allow you to navigate through the menu
6. **Audio/Search:** Searches and finds any channels that have an audio supported camera attached to it (not included)
7. **Mute:** Mutes sound
8. **Rewind:** Rewinds footage
9. **Record**: Begins recording based on the 24 hour schedule
10. **Pause:** Pauses playback footage and starts/stops sequence mode
11. **Play**: Calls up the playback menu
12. **Fast Forward:** Fast forwards through playback footage and allows you to navigate the menu to the right
13. **Stop:** Stops recording and/or playback footage

MOUSE



1. **Select:** Click this button to select highlighted object
2. **Scroll Wheel:** This wheel has no function on this DVR
3. **USB Connection:** Connects to the USB mouse port (top port) on the back of the DVR
4. **Deselect:** Pressing this exits the menu you are in. If you are in live view it will open the sub menu

Things to Consider Before Installation

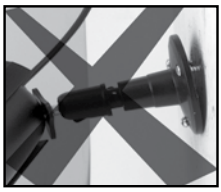
- The camera should be installed between 8 and 13ft above the area to be monitored
- Before screwing in the mount for the camera ensure there are no obstructions in the camera's view
- Place cameras in the most strategic places where they can provide detailed, recorded video of every visitor.
- Having the camera in the open for people to see can help deter criminals
- To cover large, dark areas such as backyards, garages, and driveways, place cameras in strategic locations, such as on the roof or deck, this way, less cameras are needed to cover an area
- Ensure that the sunshade is positioned to avoid glare and be sure to position camera away from direct sunlight or other light sources
- For best results, the light in front of the camera should be about the same brightness as the light around the area or object being monitored
- Decide whether the camera will be wall-mounted, ceiling mounted or sit on a desk/table top. If you are mounting the camera on a wall or ceiling, use the included mounting hardware. We recommend that the mounting bracket is secured using the included screws for all installations
- Each camera comes with 60ft of video/power wire please make sure that you mount the cameras no more than 60ft from the DVR. If longer wiring distance is required, 60ft extensions can be purchased (DF10W) from your local re-seller or at www.defender-usa.com
- We recommend using a surge protected power bar to protect the camera's internal circuitry

Mounting the Cameras

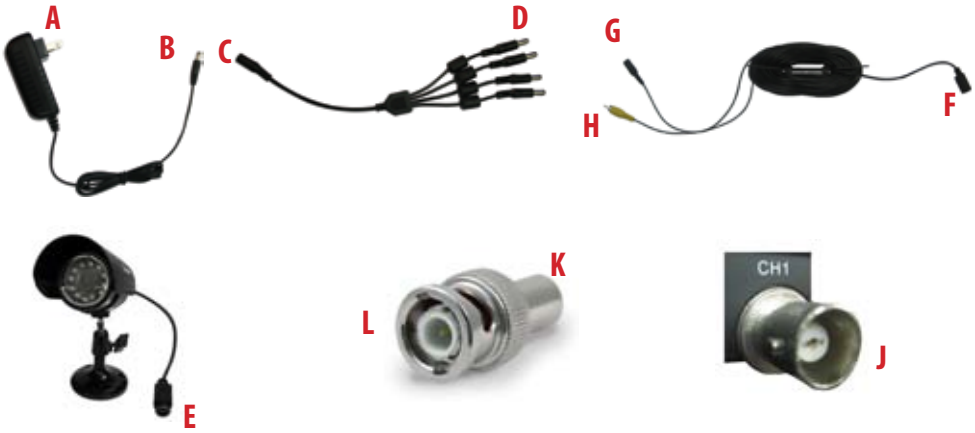
1. Decide if the camera will be wall-mounted or sit on a desk/tabletop. The camera can be adjusted for either mounting scenario by rotating it to the required position.
2. Screw the mounting bracket into the camera's mounting hole, turning it clockwise.
3. Mount the camera in the desired location no more than 60 ft from the DVR unless you have purchased additional wiring. You may mount the cameras on a wall, ceiling or desk.
4. Ensure that the cameras are strongly secured into the wall.
5. Adjust cameras to the desired viewing angles.
6. For additional help on mounting the cameras, please see the drilling template, located at the back of the manual.

Adjust camera to desired viewing angle

Ensure the camera is secured into place



Wiring for Cameras



Instructions

1. Plug 12V adapter **(A)** into electrical wall outlet or surge protecting power bar.
2. Plug the single end of the four port power supply **(C)** into the male end of the 12V adapter **(B)**.
3. Connect the 4PIN DIN female connection on the camera **(E)** into the 4PIN DIN male connection on the 60ft video power wire **(F)**.
4. Plug the power jack **(G)** from the 60ft video/power wire into one of the ports of the four port power supply **(D)**.
5. Attach the BNC to RCA connector **(L)** to the video inputs **(J)** on the back of the DVR.
6. Connect the yellow male RCA plug **(H)** from the 60 ft cable to the BNC to RCA **(K)** connector on your DVR.
7. Repeat the above steps for all of the included cameras.

CONNECTING ADDITIONAL DEVICES

Connecting a USB Mouse

It is recommended to connect the included USB mouse before powering on the DVR. This will speed up the initializing process as well as make the DVR easier to use.

1. Plug the USB connection on the mouse into the top USB connection on the back of the DVR.

Plug Mouse into first USB port

CONNECTING A MONITOR

1. Connect a BNC to RCA connector to the top VIDEO OUT connection on the back of the DVR.
2. Plug the RCA cable into the BNC connector.
3. Attach the other end of the RCA cable to a yellow RCA video input on your TV/monitor.
4. Switch the TV/Monitor source to view the DVR. (Consult the TV/Monitor manual for instructions on how to switch the video source)
5. The bottom video out is for a second monitor. Plugging an RCA cable into this video out would be the same as plugging it into the top video output.

Plug in BNC to RCA connector

Plug RCA cable to BNC

CONNECTING A PTZ CAMERA

The SN502-4CH supports a 2 wire RS-485 connection for a PTZ camera to be connected (PTZ camera not included). Please see the PTZ camera manual for further instructions on required connections and settings.

To connect a two wire PTZ camera:

1. With a small flat head screwdriver, unscrew the screw on the top of the opening.
2. Insert the wire into the hole below the top screw while it is still unscrewed
3. Re-tighten the top screw, this will lock the wire into place. Pull lightly on the wire to make sure it is secure.
4. For further instruction on connecting your PTZ camera, please see the PTZ camera's instruction manual.

POWERING ON DVR

1. Insert the included power cord into the included power supply.
2. Plug the power cord into a power outlet (surge protected power outlet recommended).
3. Insert the power supply wire into the rear DC 12V port on the DVR.
   - After a few seconds the splash screen will appear and the DVR will start up.

Connect to a power source to turn on DVR

GETTING STARTED

Now that you have powered up the DVR and properly connected it to a TV or monitor you are ready to begin setting up and using the DVR. This DVR is designed to be user friendly. You will notice the coaching iMenu information bubbles describing settings that you will find in the menu. As an added convenience the DVR will automatically begin recording once it is powered on as long as at least one camera is properly connected.

Using the Mouse

- The included USB mouse makes using the SN502-4CH simple and efficient. Using the mouse will make controlling the DVR very similar to using a computer. It will allow you to easily click on items to select them and make desired changes. The mouse is not necessary for operation
- Make sure that the mouse is connected to the top USB port on the back of the DVR before powering on.

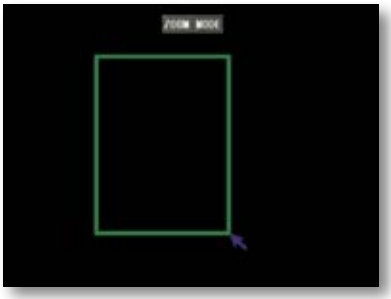
Screen Viewing

By double clicking one of the eight camera screens, the viewing mode will switch to full screen mode. Double clicking again will bring you to back to quad screen. (depending on what was set before) From full screen mode you can zoom into an area of the screen. For more information on zooming in, please see "zoom" on page 14.

Full Screen

Quad Screen

Zooming in

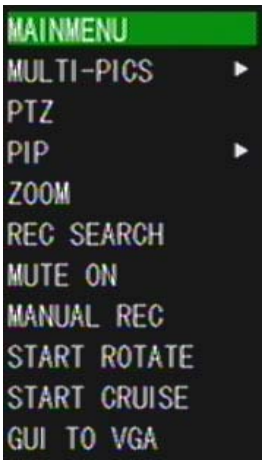


FUNCTION MENU

The Function Menu can be accessed 3 different ways:

1. ***By right clicking the mouse.***
   To access items on this menu with the mouse move the mouse pointer over the option to highlight it and left click. To exit, move the pointer off the menu and left click.
2. ***Pressing select on the remote.***
   To access items on this menu with the remote, use the arrow keys to move and when the option is highlighted, press select. To exit, press the menu button.
3. ***Pressing the function button on DVR***
   To access items on this menu with the front of the DVR use the navigational key pad on the front of the DVR to move and when the option is highlighted, press enter. To exit, press the menu button.

Function Menu



Main menu

Selecting this accesses the Main menu. If the menu is locked, you may need to unlock first.

To unlock the menu:

1. Select the area the password will be typed and a digital number pad will appear.
2. Type in the password. The default password is **123456.**
3. Once you have typed in the password, press the enter button to close the digital number pad.
4. Click "APPLY," if the password is correct the main menu will open.

Unlock Menu Prompt

DEFAULT PASSWORD:

123456

PTZ Camera

Selecting this shortcut opens the PTZ menu. PTZ stands for Pan, Tilt, Zoom cameras (Not included). This menu option only controls compatible PTZ cameras that are properly setup in the device management section of the menu.

The controls for the PTZ camera are as follows:

Directional keys: Clicking on the directional arrows moves the camera in the direction of that arrow

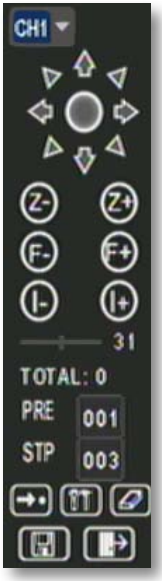
Zoom: Pressing the + zooms in and pressing the – zooms out

Focus: Pressing the + focuses the picture and pressing the – takes the focus away. This is useful if an object is either close range or long range and is being displayed blurry

Iris: Pressing the + lets in more light and pressing the – takes light out of the picture. This is useful for varying lighting situations as well as correcting backlight issues

Slow Fast: This bar allows you to adjust the speed that the camera will move

Cruise Setup: This function allows you to setup preset positions for the PTZ to follow, the PTZ camera will cruise through your set positions and times. Not all PTZ cameras have this function

PTZ setup menu

To set up cruise:

1. Right click the mouse and open PTZ.
2. Select "PTZ".
3. Select the channel that the PTZ camera is connected to. (The PTZ camera must already be configured).
4. Click on the STP text field and input the time (in seconds) for how long you would like the PTZ camera to stay at that position.
5. Use the directional buttons to adjust the camera to the places you would like the PTZ camera to view in cruise mode. Press the SET button at each desired position.
6. To review your set points, select the PRE text field and input the number you would like to view.
7. Click "save" and then "exit".
8. To Erase all Preset cruise points click the reset button.
9. To start the PTZ cruise, Open the shortcut menu and select "start cruise". To stop the PTZ cruise, Open the shortcut menu and select "stop cruise".

PTZ Cruise

PIP Mode

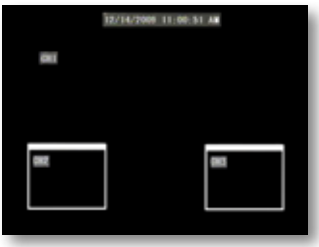
PIP stands for picture in picture. This mode allows you to view camera one in full screen and up to two camera channels (of your choice) as smaller screens in either corner of the screen. You must have at least two cameras connected to your DVR for PIP mode to function properly.

To turn on PIP mode:

1. Right click the mouse and scroll to "PIP mode", once highlighted, two options will appear, 1x1 and 1x2.
2. 1x1 allows you to view camera one in full screen and another camera in the lower left corner of the screen. 1x2 allows you to view camera one in full screen and two other cameras in the bottom left and right corners of the screen.
3. For both options, clicking on the small camera screen will change the camera that you are viewing.
4. To exit PIP mode, right click the mouse.

PIP Mode 1x1

PIP Mode 1x2



Zoom

When viewing a camera in full screen mode, your function menu gives you an option to zoom in. This is good if you would like to get a better view of something that you are monitoring.

To zoom in:

1. Double click the screen you would like to zoom in on. This will open to full screen mode.
2. Right click the mouse, scroll to "Zoom" and press select.
3. Using the mouse, click and drag a square around the area you would like to zoom in on.
4. Once the square has been set, release the mouse button and the screen will zoom in on the selected area.
5. To exit the zoomed in screen, right click the mouse.

Video Search

Selecting this shortcut prompts the video search menu to appear. This allows you to search through the previously recorded footage. For more information on the video search menu, please see PLAYBACK.

Mute

If you have connected audio enabled cameras to the DVR you can mute all noise being recorded by selecting the mute option, open the function menu again while in mute mode to turn mute off.

FUNCTION MENU

Manual Rec

Selecting this shortcut prompts the DVR to begin recording (if it is not already recording). This will override any schedule that is set

Start Rotate

1. Right click the mouse and select "Start Rotate", the cameras will then start sequencing through.
2. To stop auto sequence, double click the screen and you will return to the quad view screen.

Start Cruise

Selecting this option prompts the PTZ cruise to start (if you have set up the PTZ cruise). Selecting it again will stop the PTZ cruise

GUI to LCD

Selecting this option lockes your DVR's controls and your screen will now act as a viewable LCD monitor ONLY, you will no longer have any access to your DVR functions. To revert this function, you will need to press the button "0" on the remote control or the "REW" button on the DVR front panel.

MAIN MENU

1. The main menu can be accessed by pressing the menu button on the front of the DVR or by selecting it from the function menu.
2. To access the main menu with the mouse, right click and select main menu from the function menu. On the DVR front panel and remote, press the "menu" button.
3. To select anything from the main menu, left click the mouse, press select on the remote or press "enter" on the front of the DVR.
4. When you access any sub-menu there are a few options that may be available on the bottom of the page.

The options include:

1. **Default:** This button will restore all settings on the current page to the default settings.
2. **Apply:** This button will apply and save changes made to the current menu page.
3. **Exit:** To exit the current menu, select exit at the bottom of the screen.

Main Menu

Note: All sub menus have some or all of the above options.

USING THE KEYBOARD

The keyboard is used when typing in passwords, dates and labeling/naming certain things. This keyboard will appear multiple times when working with your DVR.

1. Select the letters you would like by pressing select. By selecting the "ABC" tab on the side, you will change the letters to be lower case and selecting it again will change the letters to numbers and again from numbers to upper case letters. To erase, select the backspace button ( ).
2. When you have typed in what you like, press the enter button ( )on the keypad to close the keyboard.

Keyboard(s)

DISPLAY SETUP

The display setup menu allows you name each camera, adjust where the title of the camera appears on screen, adjust the color of each camera, turn cameras on and off as well as decide on where the time will be displayed on screen.

Title

This will be the name of the camera that is displayed on screen. It is good to name the camera something to reflect what the camera is monitoring. Ex. Garage or Driveway. A maximum of 8 characters can be used.

To change the title of the cameras:

1. Select the camera that you would like to adjust the settings for.
2. Select the camera title option under the camera number you would like to change and a keyboard will appear.
2. Enter the title of the camera you would like then select enter to close the keyboard.
3. Select "apply" from the main camera menu to save your changes.
4. Repeat for all desired cameras.

Display Menu

Position

This will determine where the camera title will be displayed in the camera viewing window.

To change the position of the title:

1. Select the position option and a drop down list will open.
2. Select the position where you would like the title to appear on the camera screen. If you would like the name NOT to display, set the position to "OFF"
3. Repeat for all desired cameras.
4. Select "apply" to save the changes.

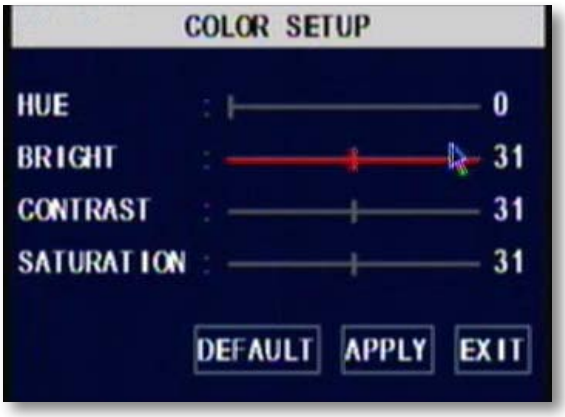
Color Setup

Clicking this button will allow you to adjust the image settings for an individual camera.

To adjust the color on a camera:

1. Select the color setup button and a full screen view of the selected camera will appear along with scroll bars to adjust Hue, Brightness, Contrast and Saturation.
2. To adjust each bar, make sure it is highlighted in red. To turn the settings up and down, click and drag the bar in the center.
3. Once you have adjusted the color to your liking, select "apply" and then "exit" to return to the camera menu.
4. Repeat for all desired cameras.

Color Setup Screen



Live

Choose whether or not to display a camera in live viewing mode. The camera will record and playback normally, it just will not appear on the live viewing screen. This is beneficial so that only authorized users can see what the camera is viewing.

To turn the live viewing of a camera on or off:

1. Select the live option and a drop down list will open.
2. Select "enable" or "disable" from the drop down list to turn the camera on or off.
3. Repeat for all desired cameras.
4. Select "apply" to save the changes.

Live Time Display

This DVR gives you an option to display the time while it is recording and while it is in live view mode. The default setting has both time displays set to "enable".

If you would like to turn either live view time display or record time display off or on:

1. Select the live time option or record time option and choose either "enable" or "disable" .
2. The time display will now be changed.
3. Select "apply" to save settings.

Copy to

This DVR gives you an option to copy all display selections from one camera to another, or all cameras.

To copy settings from one camera to other cameras:

1. Select the copy to option and choose a camera number or "all" cameras.
2. The settings from the currently viewed camera will now be copied to the camera(s) selected from the drop down list.
3. Select "apply" to save settings.

RECORD SETUP

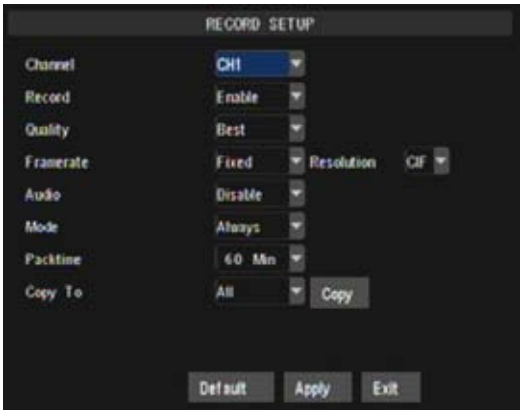
This option allows you to turn on or off each camera, pick a video quality, adjust the frame rate, pick a resolution, enable or disable audio recording, pick a recording mode (time schedule or always), set the file pack time (recorded video size in minutes) and copy settings from one camera to another.

Record (Enable/Disable)

To turn channels on or off from recording:

1. Select the drop down menu beside the channel(s) you would like adjusted.
2. Highlight whether you would like the camera enabled or disabled and press select.
3. Select "apply" to save settings.

Record Setup Screen



Quality

To change the quality of the recorded video:

1. Select the drop down menu beside the channel(s) you would like adjusted.
2. Highlight the quality you would like to change to (Best, better, or good) and press select.
3. Select "apply" to save settings.

Frame Rate and Resolution

This DVR has the capability of changing it's FPS, this means that with higher FPS the recorded video will be smoother and better quality, lower FPS will result in a choppy video (that takes much less space on your harddrive).

To adjust the frame rate of recorded video:

1. Select the drop down menu beside the channel(s) you would like adjusted.
2. Highlight either "fixed" or "manual" to select the framerate option.
3. If you select fixed, you will have the option of manually choosing your resolution setting, choose either D1, HD1, or CIF from the drop down menu to the right of the frame rate option.
4. If you select manual, a framerate setup button will appear next to the drop down list, click on this button.
5. The framerate setup screen will now open and you can choose either CIF, HD1 or D1, and the exact amount of frames per second you would like each camera to record at. (more frames per second will decrease the amount of video time that your harddrive can accomodate)

Set FPS Screen

6. You can choose to copy settings from one camera to another by using the copy options under the FPS settings.
7. Select "apply" to save settings.

Audio Rec.

To turn audio recording On or Off:

1. Select the drop down menu beside "Audio Rec".
2. Highlight which camera you would like the audio to record from and press select. This has to be an audio supported camera (not included) and it must be connected to the RCA audio input at the back of the DVR.
3. Select "apply" to save settings.

Note: Higher quality and resolution settings use up more space on your hard drive.

Pack Time

The DVR allows you choose the maximum length that each recorded video clip will be. This is for backup purposes.

To adjust and/or set a pack time:

1. Select the drop down menu beside "Pack Time".
2. Highlight the time you would like each recorded video clip to be (15, 30, 45 and/or 60 min) and press select.
3. Select "apply" to save settings.

Rec. Mode

The DVR allows you choose whether it always records, or if it records based on a set schedule.

To program your DVR to always record:

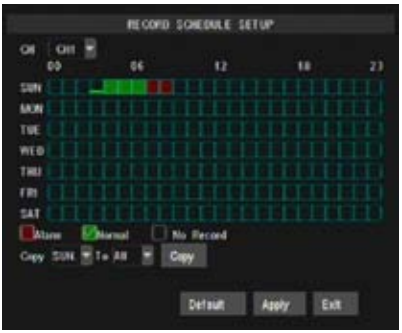
1. Select the drop down menu beside "Mode".
2. Highlight the word "always" and press select.
3. Select "apply" to save settings.

To set your DVR for schedule record:

1. Select the drop down menu beside "Record Mode".
2. Highlight the words TIME SCHEDULE RECORD and press select.

The default schedule is set to general record on a 24/7 schedule.

Schedule Menu



To customize your record schedule

This DVR allows you to set different schedules for each channel, what days the DVR will follow the set schedule as well as select what record mode will be used. (Normal record, motion record or when the alarm is detected.)

1. From the camera setup menu, make sure the DVR is set to "TIME SCHEDULE RECORD."
2. Highlight the word SCHEDULE (beside the record mode drop down list) and press select.
3. This will bring you to a separate screen.
4. Select the drop down list beside the word "CHANNEL", highlight and select the camera you would like to set that schedule for.

To change the schedule:

1. At the bottom of the schedule area, highlight the type of recording you would like to insert and press select, a check mark will appear in the corresponding box.

   Alarm record: (Red) Records only when motion is detected

   General Record: (Green) Constantly records

   No Record: (Transparent) Footage will not record at this time

2. In the schedule area, scroll to the day and time you would like to adjust (to record, alarm record or no record) and press select. The time slot will fill with the corresponding color.
3. Repeat for all wanted times and days for each desired camera (or all cameras).
4. Once you have set all schedules for the desired cameras, days, times and record modes select "apply" to save settings.

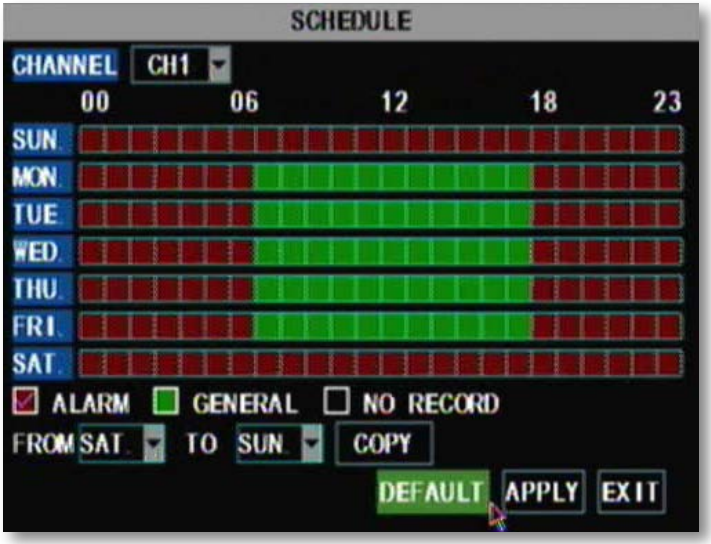
Schedule Copy Function

Selecting the COPY button will copy one days schedule and paste it into other days that you specify. This is useful if you customize a schedule for a particular day and would like to apply the same schedule for other days of the week.

To copy one day's schedule to another or all other days:

1. Select the drop down menu beside the word "from".
2. Highlight the day you would like copied.
3. Select the drop down menu beside the word "to".
4. Highlight the day you want the copied schedule to be pasted into.
5. Highlight the "copy" button and press select, the days you had selected will all have the copied schedule in it.
6. Once you have completed all desired schedules, select "apply" to save settings and "exit" to exit back to the record setup menu.

Schedule Copy Function



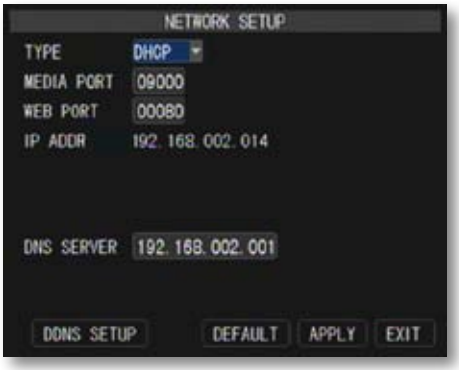
Note:
Please be aware that you must set a schedule for each camera that is connected unless you decide to set all cameras to the exact same schedule.

NETWORK SETUP MENU

The network setup menu is your gateway to viewing your footage online. This menu holds the information you need to set up on-line viewing. The DVR is pre-configured to work with most basic network setups and the values shown on the screen are the values you will be using to setup and view the DVR on a computer.

The network setup menu allows you to configure all the settings necessary to view your DVR online. You can configure the way the DVR acquires an IP address, adjust which ports are used to communicate with the DVR, adjust your DNS as well as set your information for a DDNS account.

Network Menu



Type:

Determines how the DVR will acquire an IP address; DHCP, Static or PPPoE.

DHCP:

DHCP (Dynamic Host Configuration Protocol) address is the most common setup for home or office networks. This allows the DVR to automatically receive an IP address from the router. By default the IP mode will be set to DHCP and, in most situations this is acceptable.

Static IP:

Static IP addresses are manually assigned by an administrator. A static IP address would be beneficial if your internal IP address changes often. Most home or office networks today do not use static IP addresses. If you are unsure of whether you need a static or dynamic IP address, please contact your network administrator.

PPPoE:

Used for DSL services where individuals connect to a DSL modem. It is recommended to store the PPPoE information in the router, if the PPPoE information is not stored in the router, the DSL modem will need to be configured. If you are using a PPPoE connection, contact your Internet Service Provider for your PPPoE name and password.

To adjust the type of IP Mode you are using:

1. Select the drop down menu beside the word TYPE.
2. Highlight the IP Mode you would like to use and press select.
3. Select "apply" to save settings.

IE Port:

Refers to the port that your DVR will use to communicate with your network and Internet. Knowing this port is necessary for the DVR to be viewed properly over the Internet.

Media Port:

This port is used to initiate communication to the DVR. The media port is entered at the end of the IP address to connect to the DVR. If using the default port (80), your Internet browser will automatically add port 80 at the end of the address, even though it may not be visible. If using a port other than 80, you will need to add that port to the end of the IP address when typing it into the web browser. (Ex. If using port 2000 and the IP address is 192.168.1.103 you would type http://192.168.1.103:2000 in the address bar of Internet Explorer).

Web Port:

The web Port is used to initiate the communication to the DVR. It is used as a gateway to the main port. The web port should be left as 80 unless port 80 being blocked by your ISP.

To Change the port you are using:

1. Select the drop down menu next to the port you would like to change and a keyboard will appear.
2. Type the port number you would like to use then select enter to close the keyboard. The ports cannot be the same number
3. Select "apply" to save your changes.

IP Address:

The numbers here represent the Internal IP address of your DVR. If your DVR is not properly connected to the router, the address will appear as 0.0.0.0. or the words "getting IP" will be displayed

To acquire an IP address:

- Make sure the DVR's IP mode is set to DHCP
- Once adjusted to DHCP, select "apply" to save and exit the menu
- Unplug the power cable from the DVR
- Connect the included network cable from the back of the DVR to your router
- Plug the power cable back into the DVR
- Enter the network setup menu to verify that the IP Address is displayed on the network setup

Note: The internal IP address is the most important number on the Network Setup Menu screen and the Ports will be used to set up Port Forwarding which is necessary for viewing the DVR outside of the current network.

DNS:

Stands for "Domain Name System" and is for advanced network setup. DNS is used to convert common names into website IP Addresses. It is best to leave these settings as is as it us usually the same as the router.

To Change the DNS address:

1. Highlight and select the number next to DNS and a keyboard will appear.
2. Type the number you would like for a DNS address then select enter to close the keyboard.
3. Select "apply" to save your changes.

DDNS:

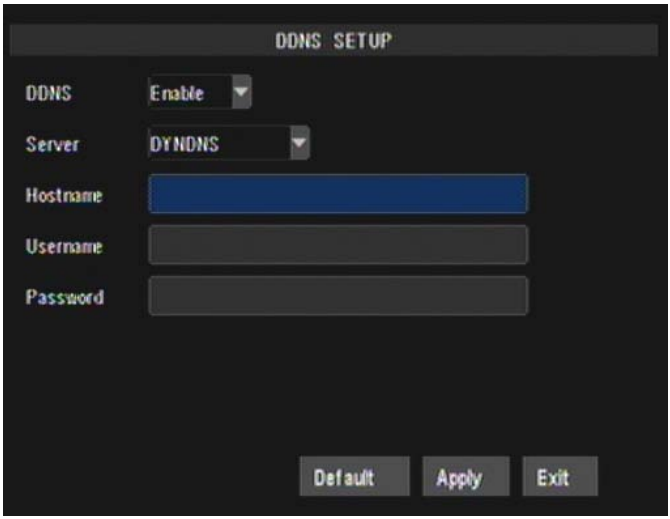
DDNS (Dynamic Domain Name Service) This Menu option allows you to set up a common name for the DVR instead of typing in an IP address. This feature is used if you have a Dynamic IP address from your ISP and the IP address is constantly changing. ***The setup for DDNS on your computer is in networking guide on Pg 61.***

To setup your DDNS on the DVR:

1. Highlight and select DDNS setup.
2. Highlight "DDNS" and change from "disable" to "enable".
3. Highlight server, this should be set to DynDNS. Choose your DDNS provider from the list.
4. Highlight "HOST NAME" and press select, the keyboard will appear to input your host name.
5. Highlight "USER NAME" and press select, the keyboard will appear to input your user name.
6. Highlight "PASSWORD" and press select, the keyboard will appear to input your password.
7. Once all the proper information is inserted into the boxes, select "apply" to save your settings.

See DDNS Setup for more information on the DDNS setting.

DDNS Setup



VIDEO SEARCH

This option allows you to search through your previously recorded footage and find footage recorded from particular dates and times. You can access the video search menu by pressing play in live monitoring mode, from the shortcut menu or by selecting the "Search" option on the main menu.

Record Search Screen

To access and play back footage from a particular date and time:

1. Select the channel you would like to view recorded footage from **(1)** and press select. Then, highlight and select a date you would like to view footage from **(2)** a keyboard will appear for you to input the date that you would like to see footage from. Highlight and select search **(3)** to open up the search times for that date.
   - Once you have searched for a particular month, you can view times and footage from each day of that month by double clicking on the day in the calendar below **(7)**
   - The days and times that have Motion/Alarm recorded footage stored on them are red in the time schedule **(4)**
   - The days and times that have General Recording stored on them are green
   - If the time is not red or green, it means there was no recording during that time
3. To search for a particular time on a set date, highlight the time you would like to watch **(4)** and press select, a keyboard will appear to input the start time of the footage you would like to view. Click on Playback **(6)** to start viewing from that date and time.
4. If footage was recorded within the selected date and time slot, the footage will begin to play. If nothing was recorded, a screen will appear and read "no record file found". Check your Date/Time and try searching to see what video footage is available.

Detail File List

This DVR allows you to view the file list for each day that you have recorded footage. The file list allows you to see what the type of recording was (normal, motion detection), the date and time the footage was recorded, the size of the footage, as well as gives you an option to backup particular recorded events.

To access the file from the video search menu:

1. Pick a channel you would like to view footage from, then access the search option and select the date input area. A keyboard will appear to input the date you would like to see the footage from.
2. Once the proper date has been entered, highlight and select "search" to open up the available times for that date. The days and times that have recorded footage stored on them are highlighted red or green. Make sure that there are days that have recorded footage on them.
3. Select the Date you wish to view the file list from.
4. Select the file list button and a separate screen will appear. This screen will have a list of all the recordings from that day.

File List Menu

5. If you would like to filter out the types of recordings on this list, select what type of recording you would like to see from the drop down menu next to the word "TYPE". You can view only alarm (motion) recordings, only normal recordings or all recordings.
6. The list displays the following information (from left to right).
   - **CH:** The channel with recorded footage
   - **Time:** The time range that the footage was recorded
   - **Size:** The size of the file – the larger the file the longer the video clip
   - **Type:** The type of footage that was recorded (Alarm or Normal)
   - **BAK:** Allows you select video clips to backup onto a USB device
7. The buttons along the side of the list, when highlighted and selected do the following:
   - **First:** Brings you the beginning of the list (oldest footage first)
   - **Prev:** Brings you back a page if not already on the first page
   - **Next:** Brings you forward a page
   - **Last:** Brings you to the last page of recorded footage (most recent footage is last)
   - **All:** Selects all footage on the page to be backed up
   - **Reverse:** Inverses the selected and non-selected footage for backup
   - **Backup:** Prompts back up of the selected video clips
   - **Exit:** Exits the file list

Log List

To view the log of files in the order that they were recorded, select the Log button on the bottom of the video search screen. Here you can choose to view files based on record type and time frame.

1. Select the record type and time frame and press the search button, the list of files will come up on the screen.
2. Here you can select and playback, or backup any of the files.

BACKUP

Your DVR allows you to backup footage onto a USB device, USB HDD, or a USB CD/DVD burner and play it back on your computer.

To Backup footage onto USB device:

1. Make sure a USB device or USB burner is plugged into the proper USB connection on the back of the DVR.
2. Access the file list from the particular day you would like footage backed up. (Instructions on Pg. 26)
3. Highlight and select the box under the word BAK next to the video clip(s) you would like backed up.
4. Select the backup button.
5. This will prompt the DVR to begin backing up footage to the USB device or USB burner.
6. Once the selected footage has backed up onto the USB device or USB burner, highlight and select "exit" to exit the menu.
7. To view the backed-up footage on your USB device please see "computer playback" section of the manual. (Pg. 45). To view the backed up footage on a CD/DVD, follow the basic instructions for your CD/DVD player.

Connect USB device into bottom USB port

Note: The Backup format is .264 and will require a player of conversion program to play the file. Video clips can also be played back using the web viewer.

DEVICES

Selecting this menu option opens up a separate sub menu that allows you to select and configure the options for each particular device associated with the DVR. The devices include:

- **HDD:** Hard disk drive
- **Alarm:** Internal alarm settings
- **PTZ:** PTZ camera setup (PTZ camera not included)
- **Mobile:** Online mobile viewing setup
- **Motion Detection:** Motion detection settings
- **Exit:** Exits the menu

Devices Menu

HDD

This menu option gives you information about your HDD (Hard Disk Drive), allows you to enable overwrite mode, and format the hard drive and/or USB drive.

HDD Management Menu

The information that this option gives you includes:

- **HDD Status:** Displays the current operating status of the hard drive. If the Hard Drive is functioning normally it will display "OK"
- **Total Space:** Tells you how much space you have altogether on your HDD
- **Avail Space:** Tells you how much space you have available to record on the HDD before all the HDD space is used up
- **Available Time**: Amount of remaining time available to record

Overwrite

When the HDD has overwrite enabled, it will record over the oldest footage once the HDD fills up instead of stopping the recording, this way the DVR is always recording. If you want to stop recording when the HD is full, set overwrite to "Close".

To Enable/Disable overwrite mode:

1. Select the drop down menu beside "Overwrite".
2. Select either "auto" to turn overwrite on, you can also set the DVR to overwrite for just a few hours or days, or choose "close" to turn overwrite off.
3. Select "apply" to save settings.

HDD Format

Formatting the HDD erases all recorded video and audio on your Hard Disk Drive. Formatting will not erase any of your custom settings on your DVR.

To Format the HDD:

1. Highlight the "Format HDD" button and press "select".
2. A screen will come up asking you if you are sure you want to format everything on your HDD.
3. Select "OK" to format the HDD or "cancel" to prevent formatting.
4. It may take a few minutes to format the HDD. Formatting cannot be stopped halfway through.
5. Once formatting has completed a screen will come up and let you know that the HDD has formatted successfully.
6. Select "OK" then, exit the menu and the DVR will restart.
   - *Formatting HDD does not change any settings, it only erases all your recorded footage.*

USB Format

USB format erases anything you have stored on your USB device. Before formatting, make sure your USB device is connected to the bottom USB port on the back of the DVR.

To Format the attached USB drive:

1. Highlight and select the "USB Format" button.
2. A screen will come up asking if you are sure you want to format your USB device.
3. Select "OK" to format the USB or "cancel" to prevent formatting.
4. It may take a few minutes to format the attached USB. Do not remove the USB drive during this time.
5. Once formatting has completed a screen will come up and let you know that the USB has formatted successfully.
6. Select "OK" and you will have successfully formatted the attached USB drive.

HDD and USB format buttons

Warning Screen

Alarm Setup

The alarm menu allows you to adjust for which alarms you would like set, adjust time the internal buzzer will sound for as well as set email notifications. This DVR gives you the option to have email alerts sent when motion is detected.

To turn on alarm:

1. In the alarm menu go to the alarm notification(s) you would like to be notified on (HDD LOSS, HDD SPACE, VIDEO LOSS) and press select to open the drop down list.
2. Highlight and select "ON" for each function you would like to be notified on.
3. Next to the word "Buzzer", highlight and select the drop down list and highlight and select if you would like the alarm on or off.
4. Next to the word "Duration", highlight and select how long you would like the alarm to sound for when the alarm is triggered.
5. Once you have set the alarm settings to your liking, select "apply" to save your settings.

To set notifications:

1. In the alarm menu go to the notification(s) you would like (HDD LOSS, HDD SPACE, VIDEO LOSS) and select to open the drop down list.
2. Highlight and select "ON" for each function you would like to be notified on.
3. Highlight and select "apply" to save your settings.
   - Now that you have set which alarms you would like to be notified on, you can set up your DVR to give an audio alert when those alarms are triggered. You can also set up your DVR for an audio alert and/or email alert when motion is detected.

Alarm Setup

PTZ Setup

PTZ setup allows you to input information for a PTZ camera. (PTZ cameras not included) The information must be entered in the DVR so that the DVR works with your PTZ camera and all its functions.

To input the PTZ information:

1. Find which camera channel the PTZ camera(s) are hooked up to and from that channels row on the PTZ setup menu, input the proper information for your PTZ camera.
2. The information you need to select will be specified in the PTZ manufacturer manual.
3. Choose to enable/disable cruise mode for the PTZ camera, once all the correct information is entered into the DVR, select "apply" to save changes.

Mobile Setup

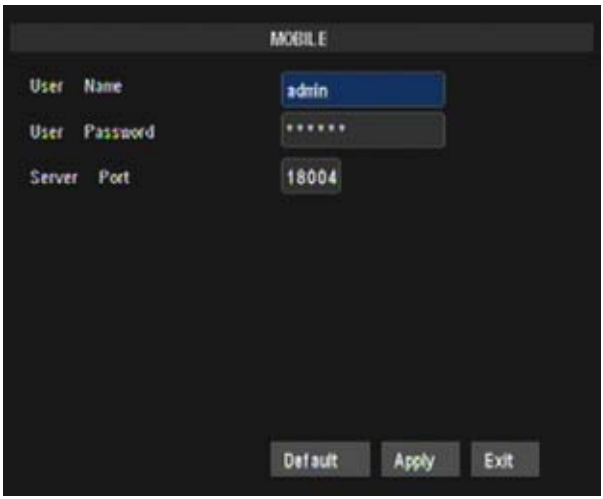
The SN301-8CH is compatible with iPhones, BlackBerry, Windows Mobile and Symbian operating systems. The mobile setup menu allows you to input the user name and password you would be using to view your DVR through your mobile phone. It also allows you to adjust which port your phone will be viewing from. Port forwarding on the router must be configured for this port for mobile viewing to work.

- Instructions for viewing your DVR through a mobile phone are in the network guide of this manual on Pg 76
- Software is required to be installed on the mobile device

To adjust the user name, password and server port for mobile login:

1. Select the column next to the setting you would like to change and a keyboard will appear.
2. Type the name, password and port you would like then select enter to close the keyboard. (User name and passwords are case sensitive).
3. Select "apply" from the main camera menu to save your changes.
4. For more information about mobile setup please see Mobile Viewing (Pg. 76)

Mobile Setup



Motion Detection

This menu option allows you to adjust the motion detection settings for each individual camera. The settings you can adjust include turning motion on or off, adjusting the sensitivity and selecting the motion detection area.

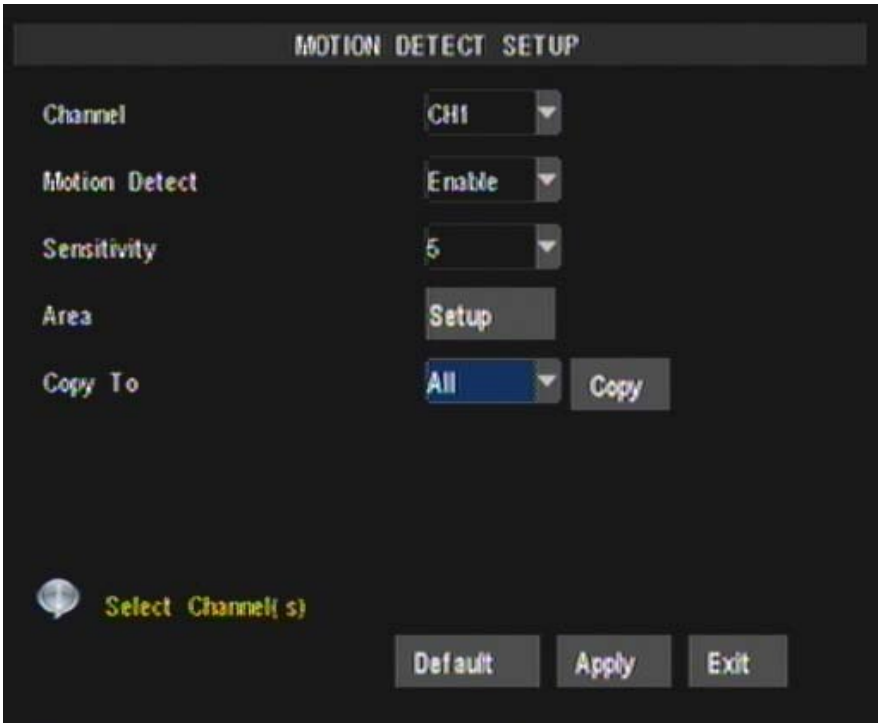
To change the status of motion detection for each camera:

1. Select the "status" drop down list under the camera you would like to turn motion detection on/off.
2. Select "on" or "off" from the drop down list to turn the motion detection on or off for that camera.
3. Repeat for all desired cameras.
4. Select "apply" to save the changes.

To change the sensitivity of motion detection for each camera:

1. Select the "sensitivity" drop down list under the camera you would like to adjust the motion detection sensitivity.
2. Select 1 to 5 from the drop down list to adjust the sensitivity. 1 is the lowest sensitivity and 5 is the highest sensitivity.
3. Adjust the sensitivity for all desired cameras.
4. Select "apply" to save the changes.

Motion Detection Menu



MD Area

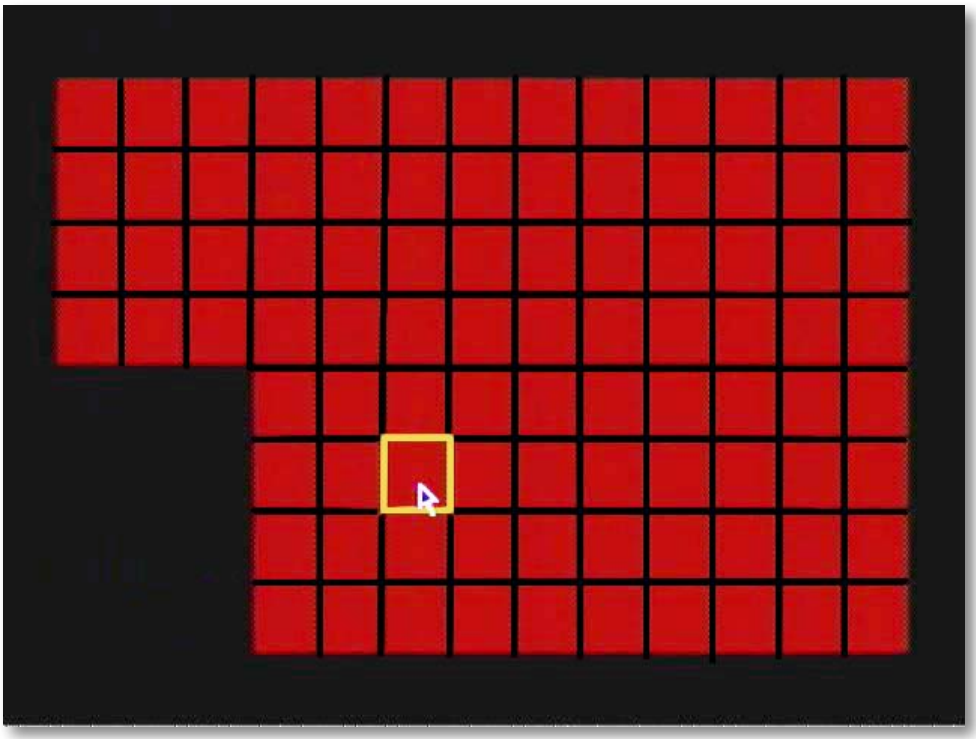
MD area stands for Motion Detection area. This setting allows you to adjust particular areas of each camera where motion will and will not be detected. This is good if you had a camera pointed towards something that is always moving, such as a busy road. This way the DVR only records motion that is out of the ordinary, thus saving you HDD space and more days of recording.

To adjust the MD area

1. Select the setup option under to the camera you would like to adjust the motion detection area and a separate screen will appear with a red mask on the picture and a grid.
2. The screen is fully red; this is because the DVR is automatically set to detect motion throughout the whole screen.
3. To adjust the motion detection area for the desired cameras, highlight the squares where you do NOT want motion detected and press select. When the area is no longer shaded in red, the area will no longer detect motion.
4. Once the motion detection areas have been determined, exit the screen by right clicking or pressing "ESC" then select "apply", to save settings.

Note: It is most efficient to set this up using the mouse.

Motion Area Mask



SYSTEM SETUP

This menu option allows you to change system settings on your DVR. The settings you can change include:

- **Date and Time:** Adjust date, time and daylight saving time
- **Password:** Turn the password function on/off as well as change the password
- **Video:** Adjust video resolution as well as video standard
- **Language:** Eight languages to choose from
- **Info:** Gives you information about the device, software version, and the MAC address
- **Maintenance:** Allows you to adjust auto maintenance, reboot system, update system and re-load all of the default settings

System Setup Menu

Date and Time

This menu option allows you to adjust the date and time, change the format of the displayed date, adjust the time format, set time zones and adjust the DVR for daylight saving time.

To adjust the Date:

1. Select the column next to the date you would like to change and a keyboard will appear.
2. Type the date in the order of the selected format (listed above time format) then select enter to close the keyboard.
3. Select "apply" to save your changes.

To adjust the Time:

1. Select the column next to the time you would like to change and a keyboard will appear.
2. Type the time in the order of the selected format (listed below date format) then select enter to close the keyboard.
3. Select "apply" to save your changes.

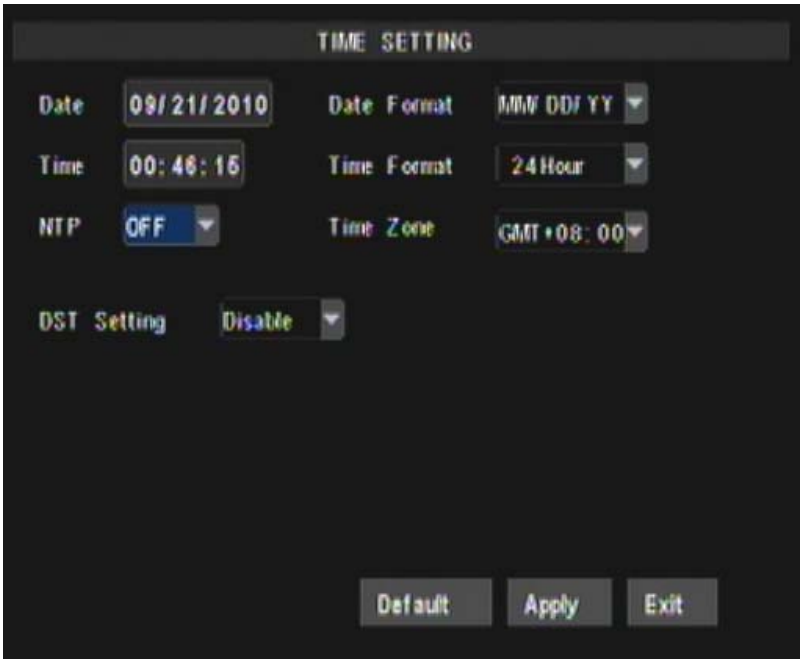
To adjust the Date Format:

1. Select the scroll bar next to "date format" and a list will appear.
2. Highlight and select the type of date format you would like.
3. Select "apply" to save your changes.

To adjust the Time Format:

1. Select the scroll bar next to "time format" and a list will appear.
2. Highlight and select the type of time format you would like. Choose between a 12 hour clock or a 24 hour clock.
3. Select "apply" to save your changes.

Time Setup



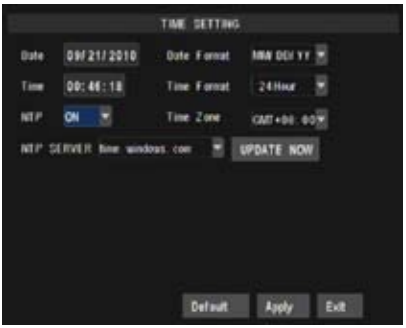
NTP Server

You have the option of setting your DVR to sync its time to various web servers, so your DVR is guaranteed to have the correct time, and automatically adjust for daylight savings time.

To set the DVR to sync with a NTP time server:

1. Select the scroll bar next to NTP and select on.
2. The NTP server options will come up once NTP is set to on, here you can choose one of three time servers.
3. Choose a server and press the UPDATE NOW button, the time will be adjusted accordingly.

Time Setup with NTP options



DST (Daylight Savings Time)

DST stands for daylight saving time; you can adjust the DVR to change automatically when daylight saving time approaches, this is so you don't have to go back and do it yourself. You can also customize when the DVR changes for DST.

To set the DVR to adjust for daylight saving time on its own:

1. Select the scroll bar next to DST and list will appear, turn DST on.
2. Next to Mode, highlight default and press select to turn the automatic DST adjustment on.
3. Select "apply" to save your changes.

To customize the DVR's daylight saving time adjustment:

1. Select the scroll bar next to "DST mode" and list will appear.
2. Highlight "custom" and press select, a custom list will appear.
3. Adjust the time you want the clock to go back an hour by adjusting the week and month next to "start time".
4. Adjust the time you want the clock to go forward an hour by adjusting the week and month next to "end time".
5. To adjust the week and month that DST changes, use the drop down list, highlight the week and/or month you would like and press select.
6. Once everything has been adjusted to your liking, select "apply" to save your settings.

Time Setup with DST Options

Password Setup

This menu allows you to set up to 7 users, each with their own ID, password, and permission levels.

To set the Admin Password:

1. Select the box next to "admin" and a checkbox will appear.
2. Press the edit button to change the password. The edit password screen will appear.
3. Select the text box beside User Name and enter in your ID using the keyboard that pops up.
4. Beside password enable, select the drop down box and set it to ON.
5. Type in your password and then type it in again to confirm, in the two text boxes that pop up.
3. Select "apply" to save your changes.

To Enable User Passwords:

1. Select the box next to one of the Users (1-7) and a checkbox will appear.
2. Press the edit button to change the password. The edit password screen will appear.
3. Select the text box beside User Name and enter in your ID using the keyboard that pops up.
4. Beside password enable, select the drop down box and set it to ON.
5. Type in your password and then type it in again to confirm, in the two text boxes that pop up.
6. Select "apply" to save your changes.

To Enable User Permission Levels:

1. Select the box next to one of the Users (1-7) and a checkbox will appear.
2. Press the Permission button to change the password. The permission screen will appear.
3. Select the boxes beside the permission you want to allow that user to have access to.
4. You can also press the All button for the user to have all permissions, or clean to delete all of the permissions.
6. Select "apply" to save your changes.

User Setup Page

Password Setup Page

User Permission Page

Video Audio Setup

This menu option allows you to adjust the look and type of output, by changing the video system, resolution, and a range of other settings.

To adjust your video system:

Throughout the world there are two main video systems; NTSC and PAL. NTSC stands for National Television System Committee, and is used in parts of North America and Japan. PAL stands for Phase Altering Line and it is used in European countries. The DVR is automatically set to NTSC as Defender distributes DVRs to North America.

To change the video system:

1. Select the scroll bar next to "video system" and list will appear.
2. Highlight the video system you would like, NTSC or PAL.
3. Select "apply" to save your changes, the system will restart.

To adjust the resolution for a VGA device:

1. Select the scroll bar next to "VGA resolution" and list will appear.
2. Highlight the resolution you would like. The higher the resolution, the better the quality will be but the more space it will use up on your HDD.
3. Select "apply" to save your changes.

To set the OSD device type:

1. Select the scroll bar next to "OSD Device" and list will appear.
2. Highlight the device type you are using, VOUT, VGA, OR auto detect.
3. Select "apply" to save your changes.

Auto Rotate Time:

You can set the DVR to automatically switch channels every few seconds while in live mode.

1. Select the text box beside Rotate Time, input the amount of time in seconds that you would like each camera view to play full screen on your DVR.
2. Select "apply" to save your changes.

Volume, Margin and Privacy Zones

These options let you customize the look and sound of your recordings.

To Adjust the Volume:

1. Select the volume option and the volume screen will appear.
2. Slide the cursor from 1 to 100 to set the volume, 1 being the lowest, 100 being the highest.
3. Select "apply" to save your changes.

To Adjust the Margins:

1. Select the Margins option and the margin screen will appear.
2. Slide the cursor from 0 to 36 to set the each margin 0 being the lowest, 36 being the highest.
3. Select "apply" to save your changes.

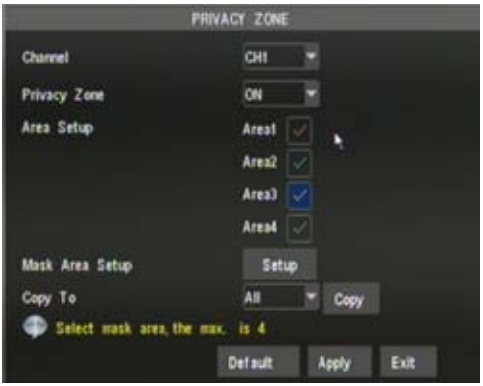
Privacy Zone

This DVR has the ability to allow you to have up to 4 provacy zones per camera, privacy zones appear as black areas on a live view screen and are never recorded, this is good if you have a safe or some other area that you do not wish to be viewed or recorded.

To adjust the Privacy Zones:

1. Select the Privacy Zone button in the Audio Video Setup screen, the Privacy Zone screen will appear.
2. Choose the desired camera using the drop down box, turn provacy zone On by selecting the drop down box labelled "Privacy Zone".
3. Place checkmarks beside the amount of privacy zones you wish to have (up to 4).
4. Press the Mask Area setup option and the setip screen will appear.
5. Click and drag the boxes around the screen to place them where you need provacy zones.
6. Press the apply button to save your changes.

Privacy Zone Screen



Language

This DVR allows you to set many different languages. The languages you have to choose from include: English, Italian, Portuguese, Spanish, Russian, Thai and French.

To adjust the language:

1. Select the drop down menu beside " System Language".
2. Highlight the language you would like and press select.
3. Select "apply" to save your settings and exit the menu.
4. The system will restart and open with your set language settings.

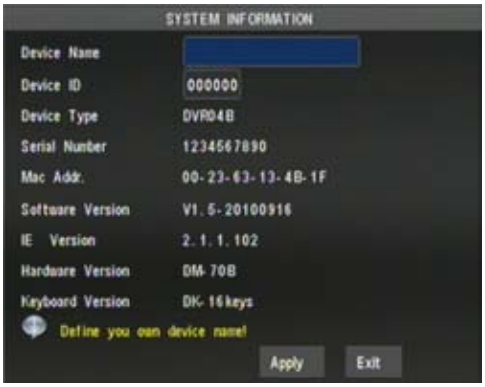
System Information

This area allows you to view information about your DVR.

The information you can view consists of:

- The Device Name
- The Device ID
- The Device Type
- The Serial Number
- The MAC Address
- The currently installed software version
- The IE Version
- The Hardware Version
- The Keyboard Version

System Information Screen



Maintenance

System maintenance allows you to load system default settings, set up your DVR for automatic maintenance, adjust system reboot, manually reboot the system as well as update the system with a USB device.

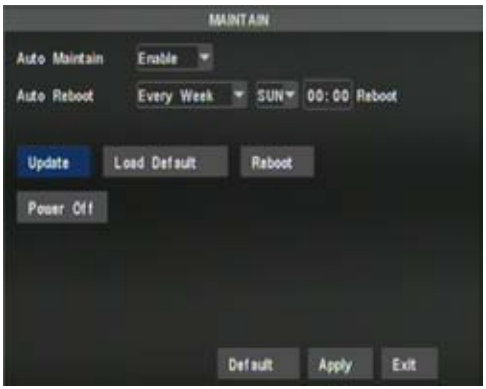
To turn auto maintenance on or off:

1. Select the scroll bar next to "auto maintain" and list will appear.
2. Highlight whether you would like auto maintain on or off and press select.
3. Select "apply" to save your changes.

To adjust auto reboot:

1. Select the scroll bar next to "auto reboot" and list will appear.
2. Highlight how often you would like the system to reboot (daily, weekly or monthly) and press select.
3. You can also adjust the time and day of week you would like the system to reboot. To do this, insert a time in the space next to the drop down list. (Based on a 24 hr clock)
4. Select "apply" to save your changes.

Maintenance Screen



To update system:

A system update can be done if there is new software available for your DVR model. This should only be done if a DEFENDER representative recommends it.

1. Download the proper upgrade files from www.defender-usa.com and put the files onto your USB flash drive.
2. Insert the USB flash drive into the back of the DVR.
3. Select system update, it should take a few minutes to update everything.
4. Once the update is complete your DVR will restart with the new software on it.

To load default

Loading default settings will restore all settings on your DVR to the default settings except your passwords and time adjustments.

1. Highlight and select "load default".
2. A screen will appear asking you if you are sure you want to restore the DVR to the default settings.
3. If you want to restore default, select "OK" , if not, select "cancel".
4. If you choose to restore the settings, the DVR will take a few minutes to load.
5. Once loaded, the factory default settings will be set.

To reboot the DVR:

1. Select the "reboot" option, a screen will appear asking you if you are sure you would like to reboot the DVR. To reboot, press "OK".
2. If you prompted to reboot the DVR, the DVR will shut down and start back up.

To Power Off the DVR:

1. Select the "Power Off" option, a screen will appear asking you if you are sure you would like to shut down the DVR. Press "OK" to turn the DVR off.

VIDEO SEARCH

There are three ways to access the search menu for playback:

1. Pressing the play button on the front panel or the remote of your DVR.
2. Accessing the search menu by right clicking the mouse and selecting "video search".
3. Accessing the main menu and selecting the video search option.
   - Video search allows you to find footage recorded from particular dates and times

To access and play back footage from a particular date and time:

1. Select the channel you would like to view recorded footage from **(1)** and press select. Then, highlight and select a date you would like to view footage from **(2)** a keyboard will appear for you to input the date that you would like to see footage from. Highlight and select search **(3)** to open up the search times for that date.
   - Once you have searched for a particular month, you can view times and footage from each day of that month by double clicking on the day in the calendar below **(7)**
   - The days and times that have Motion/Alarm recorded footage stored on them are red in the time schedule **(4)**
   - The days and times that have General Recording stored on them are green
   - If the time is not red or green, it means there was no recording during that time
3. To search for a particular time on a set date, highlight the time you would like to watch **(4)** and press select, a keyboard will appear to input the start time of the footage you would like to view. Click on Playback **(6)** to start viewing from that date and time.
4. If footage was recorded within the selected date and time slot, the footage will begin to play. If nothing was recorded, a screen will appear and read "no record file found". Check your Date/Time and try searching to see what video footage is available.

File List

This DVR allows you to view the file list for each day that you have recorded footage. The file list allows you to see what type of recording it was (normal, alarm/motion detection), the date and time the footage was recorded, the size of the footage and also the option to backup particular recorded events.

File List Menu

To access the file list:

1. Access the search option and select the date input area. A keyboard will appear to input the date you would like to see the recorded footage from.
2. Once the proper date has been entered, highlight and select search to open up the available times for that date. The days and times that have recorded footage stored on them are highlighted red or green. Make sure there are days that have recorded footage on them.
3. Select the date you wish to view the file list from.
4. Select the file list button and a separate menu will appear with a list of all the recordings from that day.
5. If you would like to filter out the types of recordings on this list, select what type of recording you would like to see from the drop down list next to the word "TYPE". You can view alarm, normal or all.
6. The list displays the following information (from left to right.)
   - **CH:** The channel with recorded footage
   - **TIME:** The time range that the footage was recorded
   - **SIZE:** The size of the file – the larger the file the longer the footage
   - **TYPE:** The type of footage that was recorded (Alarm or Normal)
   - **SELECT:** Allows you select video clips to backup onto a USB flash drive
7. The buttons along the side of the list, when highlighted and selected do the following:
   - **FIRST:** Brings you to the beginning of the list (oldest footage first)
   - **PREV:** Brings you back a page if not already on the first page
   - **NEXT:** Brings you forward a page
   - **LAST:** Brings you to the last page of recorded footage (newest footage is last)
   - **ALL:** Selects all footage on the page to be backed up
   - **INVERSE:** Inverses the selected and non selected footage
   - **BACKUP:** Prompts back up of the selected clips. For more information on backup see "Backup" (Pg. 26)
   - **EXIT:** Exits the file list menu

Playback Screen

Playback Through DVR

Once you have selected the footage you would like to view, press select and the footage will automatically play. Upon playing back the recorded footage, options on the bottom of the screen appear for you to manipulate the video. These options are also accessible though the front panel on the DVR as well as on the remote control.

The options and their functions are as follows: (from left to right on the screen)

Rewind: Pressing this rewinds the footage, the more times you press this the faster the footage will rewind (x2, x4, x8).

Slow Forward: Pressing this button slows down the playback footage. The more times you press this, the slower the video will playback.

Play: Footage plays automatically when selected from the playback menu, so pressing this button will play the footage if it is paused, rewinding or fast forwarding or stopped. (1/2, 1/4, 1/8 or normal speed)

Pause/Forward: Pressing this button once will pause the playback footage. After that, each time you press this button the playback footage will move forward a frame and pause again.

Fast Forward: Pressing this fast forwards the footage, the more times you press this the faster the footage will fast forward (x2, x4, x8).

Mute: Selecting this option will mute the sound from the playback footage. Sound will only play though if you have an audio supported camera (not included) hooked up to your DVR.

Volume Adjust: Adjusting this bar (from low to high) will adjust the volume of the sound from the playback footage. Sound will only play if you have an audio supported camera (not included) hooked up to your DVR.

Exit: Selecting this option will exit the playback footage and return you to the playback search or file list option.

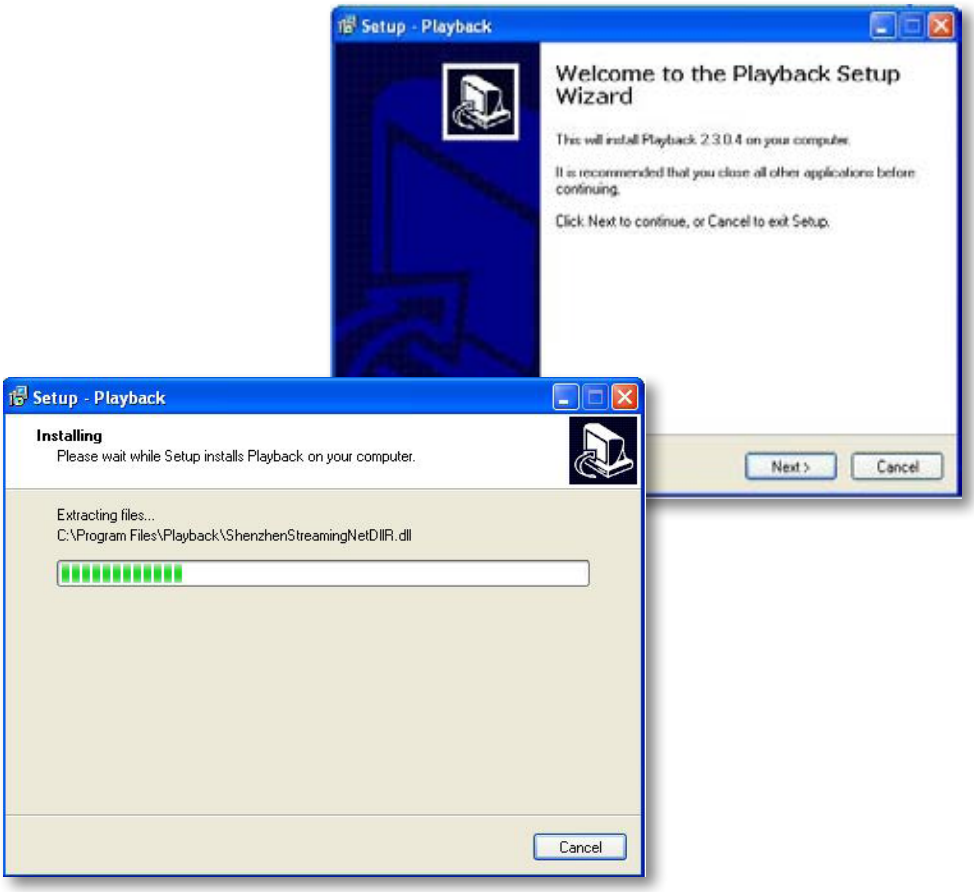
COMPUTER PLAYBACK

When you backup footage onto a USB device you can view the backed up footage on your computer. Viewing your footage from your computer allows you more options for manipulating the video as well as for backing up footage directly to your computer.

To view footage though your computer:

1. Insert included software CD into disk drive and double click to install the playback software.
2. Follow the installation guide until the end.
3. Once everything has been successfully installed, insert USB device into USB port on computer. Make sure USB device has backed up footage on it.
4. Open the playback software you installed.

Software Installation


Setup - Playback
Welcome to the Playback Setup Wizard
This will install Playback 2.3.0.4 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel
Setup - Playback
Installing
Please wait while Setup installs Playback on your computer.
Extracting files...
C:\Program Files\Playback\ShenzhenStreamingNetDllR.dll
Cancel

File Viewing

Be sure that the playback software is open on your computer. Instructions differ depending on what files you would like to open and play:

One Video

1. Select and then files. Find the USB device file, or any other area where backed up footage would be stored on your computer.
2. Make sure to view .264 Files.
3. Select the file you would like to view and select open.
4. Once you have selected open, the video will NOT play automatically. You must prompt the video to play.
5. To view the footage you must select play , from the bottom menu. Once play is selected, the video will begin.

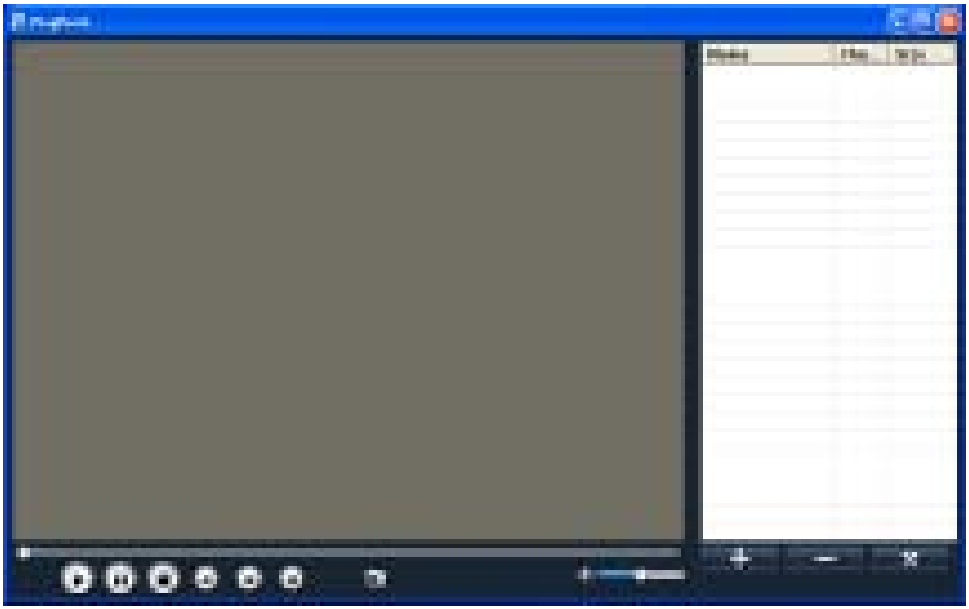
An Entire Folder

1. Select and then folders. Find the USB device file.
2. Select the file you would like to view and select open.
3. Once you have selected open, the video does NOT play automatically. You must select play .

Removing a File

1. Select the file you wish to remove from the list and press .
2. You can also clear the entire playlist by pressing .

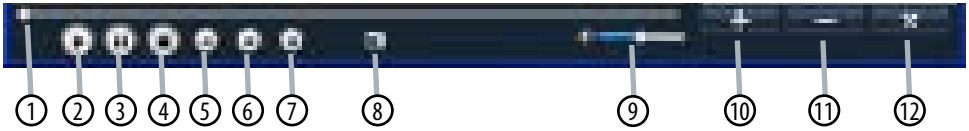
Computer Playback Software



Software Functions

The software has many functions. The drop down menus allow you to adjust the video, the file menu allows you to open video files, and settings allows you to adjust certain settings in the software.

Play Menu



The video functions from the play menu are as follows:

1. **Minute Bar:** Shows your progress of time through any footage being played
2. **Play:** Plays the footage.
3. **Pause:** Pauses the footage.
4. **Stop:** Stops the footage.
5. **Rewind:** Moves the video backwards.
6. **Fast Forward:** Slows down video.
7. **Forward Frame:** Moves the video forward a frame.
8. **Capture Picture:** This option takes a photo of the screen. When you select this option, a screenshot of the current video will be saved under a computer directory, the file location will appear beside the capture button.
9. **Volume Bar:** Allows you to adjust the volume if you have recorded footage from an audio enabled camera (not included).
10. **Add Videos:** Add a single video or a folder of multiple videos to the playback list.
11. **Remove Videos:** Remove a single unwanted video clip from the playback list.
12. **Clear All:** Clears all videos from the playback list.

REQUIREMENTS

You will need to have:

- ☐ **The DVR connected to a router**
- ☐ **The router connected to the Internet**
- ☐ **A PC or laptop that is connected to the same router as the DVR. The PC can be connected by a wired or wireless connection**
- ☐ **Internet Explorer 6.0 or higher (to check your version of Internet Explorer open I.E. In the top Menu bar select "Help" and then select "About Internet Explorer". The version of I.E. will be displayed.)**
- ☐ **A genuine and fully updated version of Windows XP, Vista or newer**

Note: The computer and DVR need to be connected to the same router for initial setup. A computer will not always be necessary at the location to view the DVR.

CONNECTING DVR TO A ROUTER

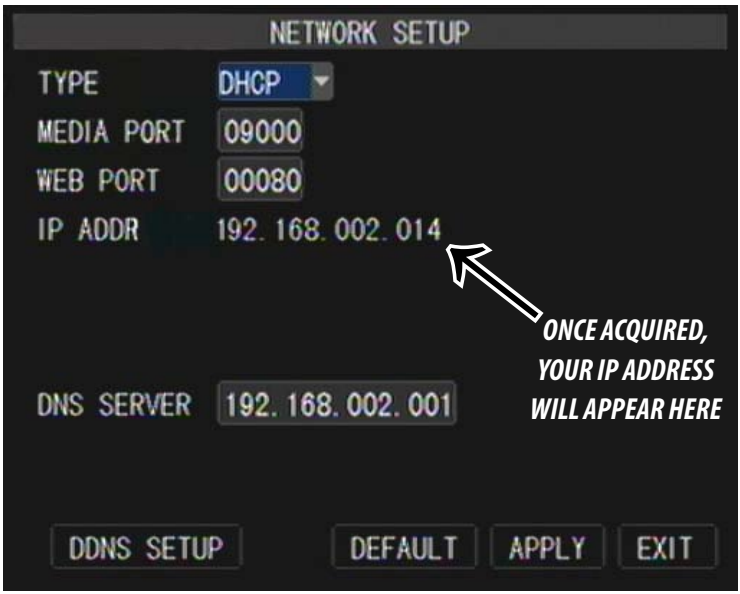
1. Power off the DVR by removing the power cable from the back of the DVR.
2. Connect the included network cable to the back of the DVR in the Ethernet port (LAN).
3. Connect the other end of the network cable to an available port on the router.
4. Power on the DVR by reconnecting the power cable to the back of the DVR.

LAN Connection

Finding your DVR's IP Address

By default, the DVR IP mode is set to DHCP. This means the DVR will automatically retrieve an IP address from the router that it is connected to. Unless your network requires a static IP address leave the DVR IP mode set as DHCP.

1. Press "Menu."
2. Enter password if prompted. The default password is **123456.**
3. Select "NETWORK SETUP."
4. Make sure the "IP Mode" is set to DHCP. This setting is acceptable for most users.
   - If the IP mode is not set to DHCP, use the drop down list next to "type" and change the type so that it is set to DHCP. You must hit "apply" and exit for the DVR to restart and retrieve an IP address
5. Write down your IP address, port and web port. This information will be used in the next few steps to view the DVR on your computer as well viewing the DVR over the Internet.



Note: ***If your router does not support DHCP, contact your network administrator to supply you with the proper IP information. If the DVR needs to store PPPoE (DSL/ADSL) settings contact your ISP (Internet Service Provider) for the proper IP address settings.***

Preparing Your Computer for Viewing the DVR:

Every computer that is accessing the DVR will need to be configured to download and run ActiveX controls. This change only needs to be made one time on the computer that is accessing the DVR. This can be done by following either of the two methods below.

Method 1:

1. Open up Internet Explorer.
2. Click on TOOLS.
3. Click on INTERNET OPTIONS.
4. Click on the SECURITY tab then the CUSTOM LEVEL button.

5. Change the ActiveX settings listed below.
   - Download signed ActiveX controls: PROMPT or ENABLED
   - Download unsigned ActiveX controls: PROMPT
   - Initialize and script ActiveX controls not marked as safe:

     PROMPT
   - Run ActiveX controls and plug-ins: ENABLE
   - Script ActiveX controls marked as safe for scripting:

     ENABLE

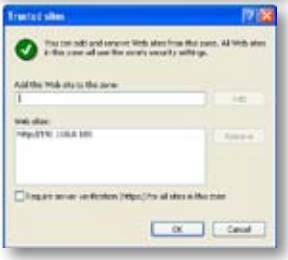
If this is an option:

   - Allow automatic prompting for file and code downloads:

     ENABLE
6. Click OK.
7. Click "apply".
8. Close the options window.

This method needs to be done on every computer you wish to view your DVR from.

Method 2:



Add the DVR's IP address to the Trusted Sites in Internet Explorer.

1. Open up Internet Explorer.
2. Click on TOOLS.
3. Click on INTERNET OPTIONS.
4. Click on the SECURITY Tab.
5. Click on TRUSTED SITES.
6. Click on the SITES button.
7. Type in the IP address of the DVR in the following format: http://192.168.0.108 and click ADD.
8. If "Require server verification (https:) for all sites ..." is selected you will need to **uncheck** the selection box.

> *The IP address used in the example above is for internal network viewing. If you are trying to access the DVR from a remote location you will add the "External IP Address" to the trusted sites list. See Finding your External IP Address.*

9. Change the default settings for the TRUSTED SITES zone to low. Click on DEFAULT LEVEL and change the security level of the zone to "Low". This can be done by running the slider to the bottom. This will allow ActiveX controls from the DVR to be downloaded and the DVR to be viewed on the computer.
10. Click "apply".
11. Click "OK".

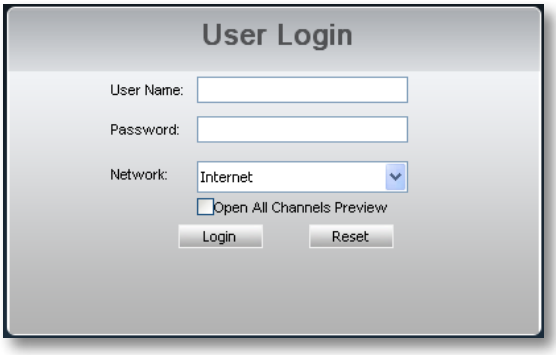
Viewing Your DVR on Your Computer

Now that the computer is prepared to install the necessary ActiveX changes listed above you are ready to start viewing the DVR using your computer. Using Internet Explorer, type the IP address of the DVR into the address bar using the following format: http://192.168.0.108 and press ENTER.

If the computer and the DVR are connected to the same router you can use the internal IP address to view the DVR. If the computer is not connected to the same router and is at a remote location you will need to use the external IP address for the DVR to view the DVR from that computer.

Log in to the DVR (Using Internet Explorer):

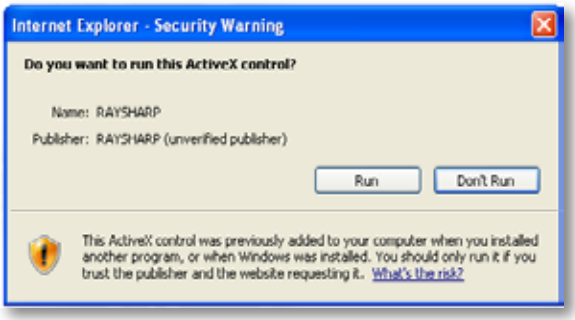
1. By default the DVR will require a user to input a password before being able to view the DVR online. The default password for the web interface of the DVR is: **123456**



Installing the ActiveX controls:

2. There will be a yellow information bar that pops up below the address bar in Internet Explorer. Click on the yellow information bar and then select "Install This Add-on for All Users on This Computer. . .". Please be patient as the installation process can take 1-2 minutes.

3. If your ActiveX settings are set correctly you will see the following dialogue box.


Internet Explorer - Security Warning
Do you want to run this ActiveX control?
Name: RAYSHARP
Publisher: RAYSHARP (unverified publisher)
Run
Don't Run
This ActiveX control was previously added to your computer when you installed another program, or when Windows was installed. You should only run it if you trust the publisher and the website requesting it. What's the risk?

4. Click "RUN".

Once everything has installed and loaded, you will see the web player and the connected cameras.

VIEWING YOUR DVR OUTSIDE OF YOUR NETWORK

Now that you have successfully viewed your DVR and cameras from a computer connected to the same router it is time to set up your router to view the DVR while at a remote location. This process is called "Port Forwarding" and you can find detailed instructions on how to complete the required steps at:

Option 1 - www.defender-usa.com/network

Option 2 - www.portforward.com

BEFORE YOU BEGIN PORT FORWARDING YOU WILL NEED:

- ☐ The DVR connected to a router
- ☐ Your computer hooked up to the same network/router as the DVR
- ☐ The brand and model number of your router (this is usually located on the back or bottom of the router)
- ☐ Internet Explorer 6.0 or higher
- ☐ The Internal IP address of your DVR
- ☐ The port and web port numbers that the DVR is programmed to run off of. To view what ports are being used with your DVR see the network setup menu on your DVR.

Note: Port forwarding is required if you want to view the DVR from a computer that is not connected to the same router.

OPTION 1: (recommended)

This option gives you an audio enabled video that has step-by-step instructions on how to port forward your DVR for your specific router.

1. Open up your web browser and go to:
   www.defender-usa.com/network
2. Once the site has loaded you will see a list with photos of different DEFENDER DVR models, select the SN301-8CH.
2. You will then see a list with photos of different types of routers. Select the router most similar to yours.
3. Once selected, another program will appear in a separate screen, select the get started icon in the bottom left corner.
4. Make sure the volume is at a reasonable listening level on your computer and follow the instructions given in the appear window.
5. Once you have completed port forwarding, see TESTING PORT FORWARDING on Pg 59.

Select your DVR (SN301-8CH)

Select your Router Model

Follow Instructional Video

PLEASE MAKE SURE TO FORWARD PORT 80 AND 9000 FOR ONLINE VIEWING. IF YOU WOULD LIKE TO USE MOBILE VIEWING, BE SURE TO FORWARD PORT 1024 AS WELL.

OPTION 2:

1. Open up your web browser and go to:
   www.portforward.com
2. Once the site has loaded, scroll down to the large list of routers.
3. Find the type of router you have and select it.
   - If you cannot find your exact router, select one that is similar to your router or made by the same company that made your router
4. Once you select a router an advertisement will appear – select the "click here to skip this advertisement" text in the top right corner.
5. On the next page there is a list of programs that require port forwarding, try to find instructions on port forwarding a DVR, if you cannot find any you can select any type of system as the instructions for port forwarding are similar for all products.
6. Follow the step by step instructions for your router on www.portforward.com. Be sure to use the set ports on the DVR (Default = Port 80 and 9000).
   - The instructions will walk you through the port forwarding process from start to finish. Your router may require a user name and password, if you do not know this you may have to contact your Internet service provider.
7. Once you have completed port forwarding, see TESTING PORT FORWARDING on Pg 58.

Go to www.portforward.com

Port forward Home page

Select a Router most similar to yours from list

NOTE: www.portforward.com is not affiliated with DEFENDER.

PLEASE MAKE SURE TO FORWARD PORTS 80 AND 9000 FOR ONLINE VIEWING. IF YOU WOULD LIKE TO USE MOBILE VIEWING, BE SURE TO FORWARD PORT 1024 AS WELL.

TESTING PORT FORWARDING

If you would like to see if your port forwarding worked, follow these steps :

1. Open a web browser and type in www.whatsmyip.org.
2. Your External IP address will be listed on the top center of the screen, make sure to write it down. This is the address that you can use when not at home to connect onto your DVR.
3. Open another web browser.
4. Type in www.canyouseeme.org. This site also allows you to see your external IP address.
5. You will see your external IP address and underneath it you will see a box saying "what port?"
6. In the box, put the port numbers you set the DVR to. The default ports are 80 and 9000 (you have to forward both, please make sure you check both ports.)
7. Click the check button and scroll down.
8. You will see a message that tells you that it can successfully see your port. This means you have successfully port forwarded.
9. If you receive an error message please view "IF YOU CANNOT CONNECT" on Pg. 60. If you're still having trouble you can always contact DEFENDER's 24/7 support team.

Write down your external IP address

Type in the port you forwarded (Default port is 80)

NOTE: www.whatsmyip.org and www.canyouseeme.org are not affiliated with DEFENDER in any way.

IF YOU CANNOT CONNECT

If the remote viewing does NOT connect it could be due to one of the following issues:

1. Make sure the browser is Internet Explorer 6.0 or higher and is on a Windows PC
2. Make sure you forwarded both port 80 AND 9000 for TCP and UDP
3. Make sure you properly installed of the controls (selected the yellow pop-up bar and ran all controls)
4. Check all your network connections and go through the above steps again to make sure a configuration error was not made. You may have to configure PPPoE settings to match the settings provided to you by your Internet Service Provider (ISP). Consult your ISP for more information on your PPPoE settings
5. Port forwarding is not set up correctly. Re-review the instructions on www.defender-usa.com/network and/or www.portforward.com to check if you set port forwarding up correctly
6. A pop-up blocker is preventing the ActiveX controls from prompting you to install
7. Your router is blocking your computer from using the external IP address from the same network as the DVR. Try connecting to the External IP Address from a computer that is not connected to the same network
8. Port 80 is being blocked by your ISP (Internet Service Provider). Try changing the HTTP port to 2000. Port forwarding will need to be setup for the new port
9. A DSL modem is preventing the connection because it is on a different sub-network. Contact your Internet service provider to assist with bridging the modem and router together

Error / Page cannot be displayed

Note: If you are having any problems with port forwarding, you can always contact DEFENDER'S 24/7 technical support.

Note: DEFENDER technical support cannot troubleshoot modems, since changing these settings can potentially render your modem inoperable. Bridging or any other modifications to the modem will need to be completed by the Internet service provider.

TO VIEW ONLINE SOFTWARE USING EXTERNAL IP ADDRESS

1. Open your Internet Explorer and type in www.whatismyip.org and press enter. This will direct you to a website that lists your external IP address on the top of the page. Write down your external IP address.
2. Open another Internet Explorer window and type in your external IP address, followed by the port you forwarded for your DVR in the following format. http://74.123.3.34:80.
3. Follow the login screen for your DVR. The default password is **123456.**
4. Install any ActiveX controls or software settings that may appear.
5. Once everything is properly installed, you will be viewing the online software. (Online software instructions can be found on Pg 64).

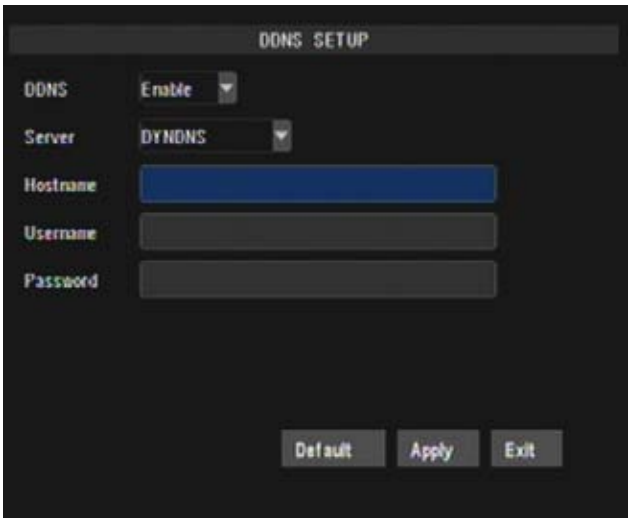
DDNS (Dynamic DNS)

Instead of having to type in the IP address to access the DVR online you can use DDNS to create an easy to remember website name. The DVR has a DDNS provider web address built into it. The following instructions are for DYNDNS.org. DYNDNS.org is not owned nor operated by DEFENDER and therefore support for DYNDNS.org will be done through their website.

To Configure the DVR to Work with DDNS:

1. Press Menu on the DVR and select "NETWORK".
2. Highlight and select "DDNS setup".
3. In the drop down menu next to "DDNS", highlight and select "enable".
4. In the drop down menu next to "Server", highlight and select "dyndns".
5. Fill out the host name, user name and password that you use for the DynDNS account you will create in the following pages.

Fill out DDNS setup with DYNDNS account information



DynDNS SETUP

The following instructions are for DYNDNS.org setup

1. On a computer that is connected to the same router as the DVR, open a web browser and type www.dyndns.org in the address bar.
2. Create a new account by clicking the "Create Account" link in the top right hand corner of the site.
3. Enter your preferred user name, email address, and password.
4. Optional information can be left blank, unless you would like to enter it.
5. Read and agree to the acceptable use policy by checking the box and click "Create Account".
6. An account verification email will be sent to the email address you supplied. You will need to follow the instructions listed on DNYNDS.org in order to complete the account activation.
   - The next page has information about creating your host name

DynDNS home page

DynDNS Account Setup

DynDNS Account Confirmation

Note:
The DynDNS sites are not owned nor operated by DEFENDER and therefore support for these services will be done through their web site.

LOG INTO THE ACCOUNT AND SETUP A DDNS HOST

To set up a DynDNS name for your DVR:

1. Enter the DYNDNS.org user name and password you created and click login.
2. Click on the "Services" button located on the menu bar.
3. Click on the "Dynamic DNS" link.
4. Click on the "Get Started" link located on right side of the screen.
5. Type in a desired host name. We recommend you use your name, family name or your business' name, as long as it is easy to remember.
6. Choose a domain name from the drop down menu. We recommend using dyndns.org.
7. In the IP address field, type in the external IP address that your DVR is connected to.
8. Leave all of the other options as they are, and click "Create New Host".
9. Follow on screen instructions to activate and view your free DDNS host name.
10. Be sure to input the proper account information on your DVR's DDNS setup menu before viewing.

Select the Services Button

Select Dynamic DNS

Select "Get Started"

Insert account info

TO VIEW DVR THROUGH HOST NAME

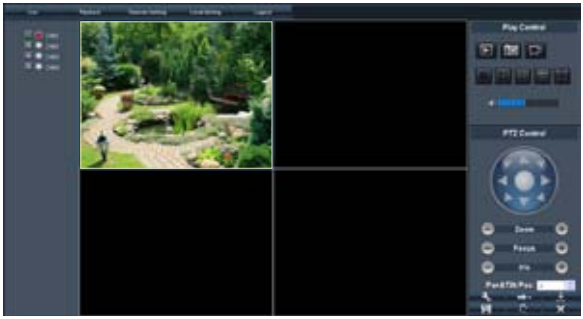
1. Ensure that all your DYNDNS account information is entered into your DVR's DDNS setup screen.
2. Open Internet Explorer and type in your DVR's host name that you created on your DYNDNS account.
3. You will be prompted for a Password.
   Default Password: 123456
4. Click OK and the DVR software and footage will appear.

Note: If using a port other than 80, the port must be specified after your host name

LOGGING INTO SOFTWARE

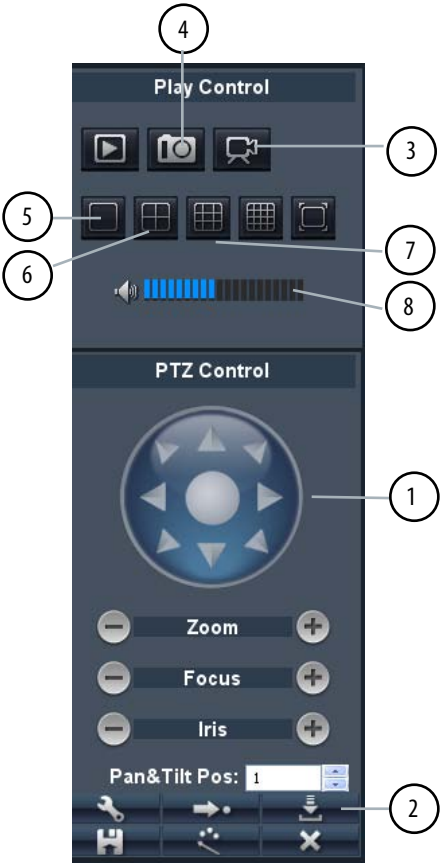
1. If you created a DYNDNS account, type in your account's host name in Internet Explorer. If you didn't create an account you can use your external IP address in Internet Explorer (if on a different computer) or your DVR's internal IP address in Internet Explorer (if on a computer connected to the same router).
2. Before you view the online software you are asked to login with a password, you can use the admin or user password and the footage will appear.
3. The login screen also has the option to adjust which connection you are viewing the software with (internet or LAN). Leave this option set to Internet.
4. **Default Password:123456**
5. Once the password is inserted, select login and the DVR software and footage will appear.

This is what the online viewing software will look like in live view:



Live Mode

The first tab along the top of the screen for the online viewing allows you to view the DVR in live mode. From this mode the buttons along the side and their functions are as follows:



1. **PTZ Camera Controls**:
   Selecting this function opens up PTZ control menu. For more information see "PTZ options" on Pg 66
2. **Cruise Setup:**
   This function allows you to setup directions for the PTZ to follow, the PTZ camera will cruise through your set positions and times. Not all PTZ cameras have this function. For more information see "PTZ options" on Pg 66
3. **Record:**
   Pressing this button prompts the DVR to record footage directly onto your computer. To stop the recording, press the record button again. The recorded footage will automatically save to the selected location on your computer. To select a location see "Settings" information on Pg 73
4. **Capture:**
   Pressing this button prompts the DVR to take a snapshot of the screen and automatically save the picture to the selected location on your computer. To select a location see "Settings" on Pg 73
5. **Single Screen View:**
   Selecting this will open up a full screen view of the screen you have highlighted
6. **Quad Screen View:**
   Selecting this will open a quad screen view of all 4 cameras.
7. **8 Screen View:**
   The software is adaptable for other DVRs, selecting this would show 9 screens for an 8 channel DVR
8. **Volume Control:**
   This controls the volume if an audio supported camera or microphone is connected (not included). Pointing and dragging the mouse across the volume bars turns the volume up and down. To mute the sound, click the speaker icon next to the volume bars

PTZ OPTIONS

The controls for the PTZ camera are as follows:

Zoom: Pressing the + zooms in and pressing the – zooms out

Focus: Pressing the + focuses the picture and pressing the – takes the focus away, many PTZ cameras do this automatically

Iris: Pressing the + lets in more light and pressing the – takes light out of the picture, many PTZ cameras do this automatically

Directional Keys: Clicking on the directional arrows moves the camera around

To set up cruise:

1. Move the camera to the places you would like the PTZ camera to cruise to and click the button at each desired position.
2. If you select the button, the set positions will be cleared.
3. Click save once you have set all positions you would like to cruise to.
4. To start the PTZ cruise select , to stop the PTZ cruise select again.

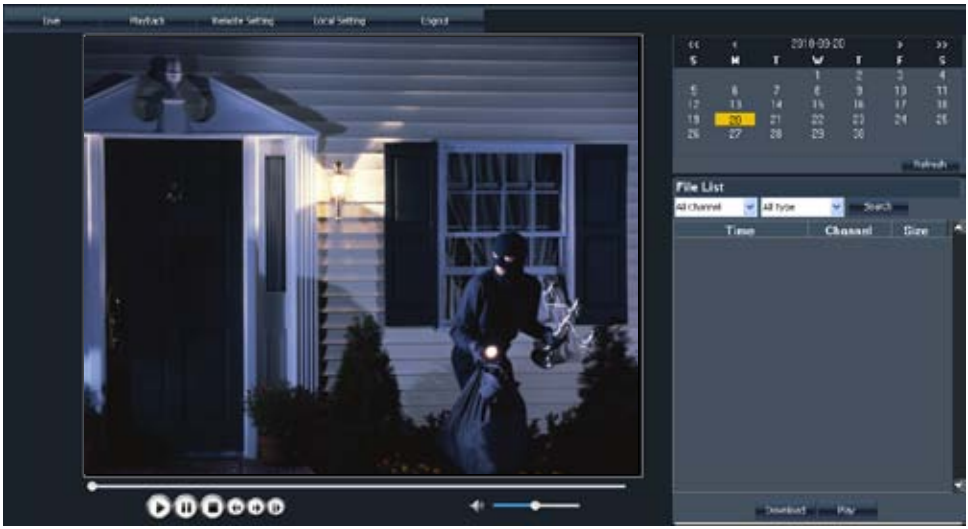
OTHER MOUSE OPTIONS

When you right click the mouse a separate menu appears and allows you to preform the following functions:

- **Open or close individual windows:** Click on the screen you would like to open/close. It should have a red box around it then right click your mouse and select open/close window
- **You can also open/close all screens:** Right click and select from menu
- **Start recording:** Right click and select from menu
- **Stop recording:** Right click and select from menu

PLAYBACK

This tab allows you to search, view and backup previously recorded footage that is stored on your DVR's HDD. You can also narrow down your search by type of footage and what camera it was recorded from.



To search through footage:

1. Select the date you would like to view the footage from on the calendar by double clicking on the particular date. If the date has available footage, it will be in bold.
2. Make sure the menu is not being accessed, if the DVR's menu is being accessed by another user, you will be unable to retrieve or view footage.
3. It should take a few moments to load the available footage. The footage will appear in the space below the calendar.
4. The list will display the footage in the following format:
   - The time the footage was recorded; the channel the footage was recorded on, the size of the footage
5. Select the footage you would like to view from this list and double click it to play it.
6. If you would like to refresh to the newest footage being recorded, select refresh. The most recently recorded footage will appear at the bottom of the list.

To narrow down footage to search through:

1. Using the scroll lists located under the calendar, select the camera and type of footage you would like to view.
2. Select "search" and only the type of footage from the camera selected will be displayed in the list below.

Playing Back Footage:

When you prompt video to play, it may take a few minutes to load, then the footage will begin playing automatically. The bottom of the screen will have the playback options.

The playback options (from left to right) are as follows:

Pause/Play: Pressing this pauses playback. If the video is currently paused, pressing this button again will prompt the video to begin playing.

Stop: Pressing this will stop the footage from playing and a blank screen will appear. Pressing play after you have stopped the footage will play the selected footage from the beginning.

F.F: Fast forward. Selecting this option fast forwards through the footage. The more times you select this, the faster the footage will fast forward (2x, 4x, 8x, 16x).

Rewind: Selecting this option rewinds through the footage. The more times you select this, the faster the footage will rewind(2x, 4x, 8x, 16x).

Next Frame: Selecting this moves the footage forward a single frame.

Volume: If you have an audio supported camera connected, clicking and dragging this will turn the volume of the playback footage up and down.

Download: Pressing this will download the selected video to your computer. The backed up footage will automatically save to the selected location on your computer. To select a location see "SETTINGS" screen information on Pg 73.

ONLINE SETUP

This tab allows you to go through particular settings and make adjustments to the DVR. The menu options you can adjust include:

- Channel Parameters
- Alarm Parameters
- PTZ Parameters
- Network Parameters
- Device Parameters
- Device Management
- Local Settings

Each function works much like the menu option on the DVR.

Channel Parameters

You can adjust the video quality, framerate, schedule and motion detection settings from this menu.

To adjust the record parameters:

1. Select the drop down menus to adjust the framerate, video quality, and resolution values.
2. Select "apply" to save settings.

To adjust the DVR record schedule:

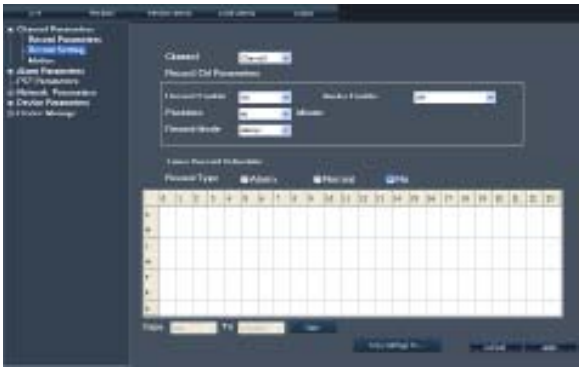
1. Choose the channel you wish to set using the drop down box.
2. You can set a 24 hour record mode using the Record Mode drop down box, or set a schedule with the sunday to monday calender.

To set your record schedule:

1. Click Alarm, Normal, or No to choose the record mode.
2. Once you have chosen the record mode, click the boxes on the day and times that you wish the DVR to record in that particular mode.
3. Select "apply" to save settings.

Record Parameters

Record Settings



To copy one day's schedule to another day:

1. Select the drop down menu beside "Copy" and highlight the day you want copied.
2. Select the drop down menu beside "To" and highlight the day you want the copied schedule to be pasted into.
3. Press the "copy" button and the copied schedule will appear in the selected days.
4. Once you have completed all desired schedules, select "apply" to save settings.

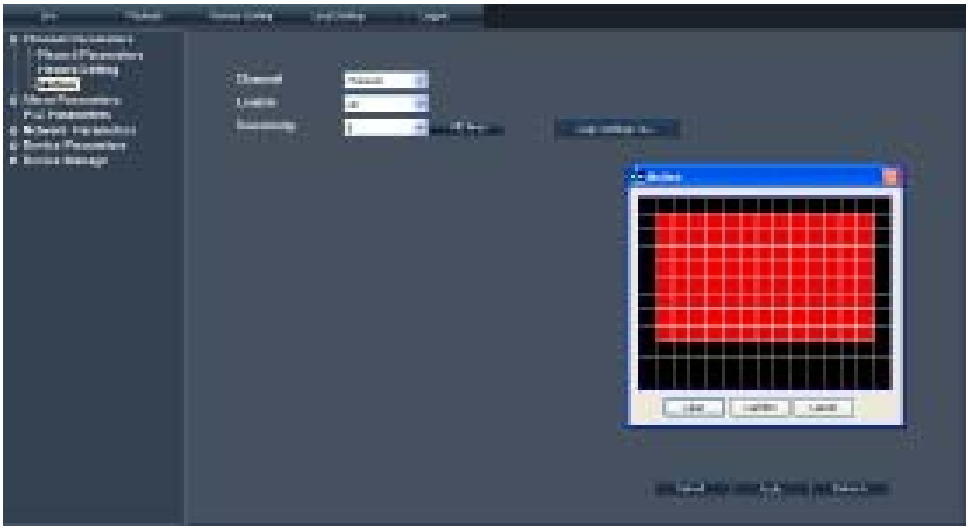
To change the status of motion detection for each camera:

1. Select the status drop down list under the camera you would like to turn the motion detection on/off.
2. Select on or off from the drop down list to turn the motion detection on or off for that camera.
3. Select the sensitivity drop down list to adjust the motion detection sensitivity. elect 1 to 5 from the drop down list to adjust the sensitivity. 1 is the lowest sensitivity and 4 is the highest sensitivity.
4. Repeat for all desired cameras.
5. Select "apply" to save the changes.

To adjust the MD area

1. Select the MD Area button and a separate screen will appear with a red mask on the picture and a grid.
2. The screen is fully red; this is because the DVR is automatically set to detect motion throughout the whole screen.
3. To adjust the MD area for the desired cameras, highlight the squares where you do NOT want motion detected and click the mouse. When the area is no longer shaded in red, the area will no longer detect motion.
4. Once motion detection areas have been determined, exit the screen by clicking confirm and select "apply", to save settings.

Motion Settings



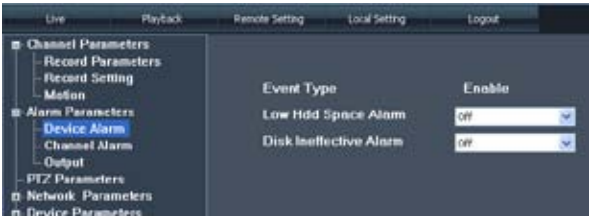
Alarm Parameters

You can adjust the device alarms, the channel alarms, and the record settings related to alarms from this menu.

To adjust device alarm settings:

1. Select the drop down menus to select whether the DVR alarm will sound when the harddrive is low on memory or the harddrive is not working properly.
2. Select "apply" to save settings.

Device Alarm Settings



To adjust channel alarm settings:

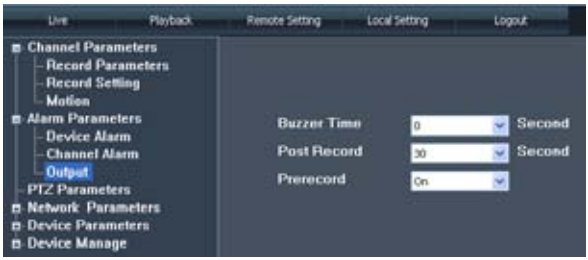
1. Choose the channel you wish to set using the drop down menu.
2. Select the drop down menus to select whether the DVR alarm will sound when the channel is encountering video loss or the camera is detecting that the lens is covered.
3. Select "apply" to save settings.

Channel Alarm Settings

To set output settings:

1. Select the drop down menus to set how long the buzzer will sound under alarm, how long the DVR will record for after an alarm is set off, and you can set a pre record time, that the DVR will back up a few seconds of video right befor the alarm went off.
2. Select "apply" to save settings.

Output Settings



PTZ Parameters

In the PTZ parameter menu, you are able to enter in the PTZ specifications from your particular pan/tilt/zoom enabled camera. (PTZ cameras not included) These values will be available in the user manual for your camera or you can call the camera manufacturer for this information.

PTZ Parameters

Network Parameters

The network setup menu is your gateway to viewing your footage online. This menu holds the information you need about your DVR to set up on-line viewing. As you have already set up your networking viewing, the network menu can be used for reference purposes. The options and selections in this network setup menu are the same as the network menu on your DVR. For more netowrking information see the Networking Guide on Page 47.

Basic network settings:

Used for reference as you will have already set these parameters from the DVR. Here you can view the networking type, ip address and all router information.

Basic Settings

PPPoE settings:

1. To set PPPoE protection on your DVR feed, enter a user name and password in this menu.
2. Select "apply" to save settings.

PPPoE Settings

DDNS settings:

1. To set DDNS protection on your DVR feed, enter a user name and password in this menu.
2. Select "apply" to save settings.

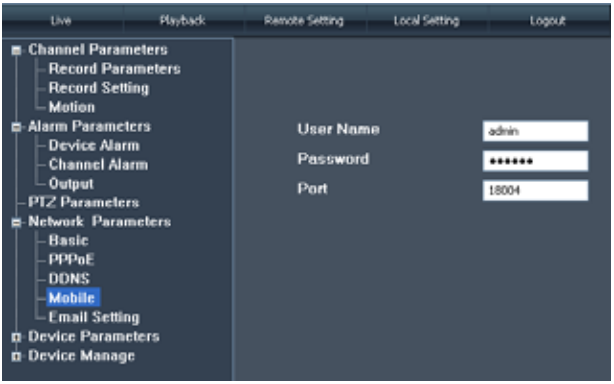
DDNS Settings

Mobile settings:

This DVR is able to be viewed from your smartphone, in this menu you can assign a username and password to protect your video feed.

1. Enter in a user name and password to protect your video feed.
2. It is necessary to assign a different port for the mobile stream to be transferred, port 18004 is a good port to use.
3. Select "apply" to save settings.

Mobile Settings



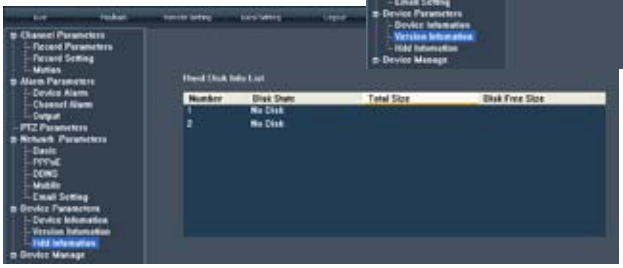
Device Parameters

This tab is for reference, there are no options to adjust, here you can view your device name and serial number, as well as the hardware and software versions. You can also view the harddrive information such as HDD status and available space. This is a useful menu when troubleshooting your DVR.

Device Information

Version Information

HDD Information



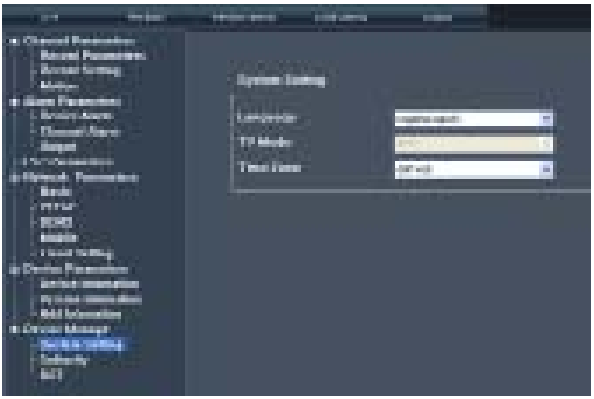
Device Management

From this menu you can adjust the language, user passwords and DST settings.

System Settings:

1. Here you can choose the dropdown menu beside language to change the DVR language, you can also choose your time zone.
2. Select "apply" to save settings.

System Settings Screen



Authority settings:

1. Select the user name you wish to change settings for.
2. The password status and information will come up under the list.
3. Now you can select a password, change user names, or disable passwords.

Authority Screen

To change the password

You have the option to change the password for user and admin, a user will only be able to access the search menu to view saved footage, where admin will be able to access anything in the menu. Both default passwords are **123456**

1. Make sure password enable is set to ON.
2. Type the password you would like then select enter to close the keyboard.
3. Type in the same password again next to "confirm" to confirm the password then select enter to close the keyboard.
4. Once you have input the passwords, select "apply", to save your changes.

DST

DST stands for daylight saving time; you can adjust the DVR to change its time for you when daylight saving time approaches, so you don't have to go back and do it yourself. You can also customize when the DVR changes for DST.

To turn the DVR daylight saving time on:

1. Select the scroll bar next to DST and list will appear.
2. Select "on" to turn the DST on.
3. Select "apply", to save your changes.

DST Settings

To set the DVR to adjust for daylight saving time on its own:

1. Select the scroll bar next to DST and list will appear.
2. Highlight default and press select to turn the automatic DST adjustment on.
3. Select "apply", to save your changes.

To customize the DVR's daylight saving time adjustment:

1. Select the scroll bar next to DST mode and list will appear.
2. Select custom and a custom list will appear.
3. Adjust the time you want the clock to go back an hour by adjusting the week and month next to "start time".
4. Adjust the time you want the clock to go forward an hour by adjusting the week and month next to "end time".
5. To adjust the week and month, use the drop down list, highlight the week and/or month you want and press select.
6. Once everything has been adjusted to your liking, select "apply" to save your settings.

Local Settings

Save Paths

You can adjust where the files you capture, record and backup will save on your computer.

To change where the files are saved:

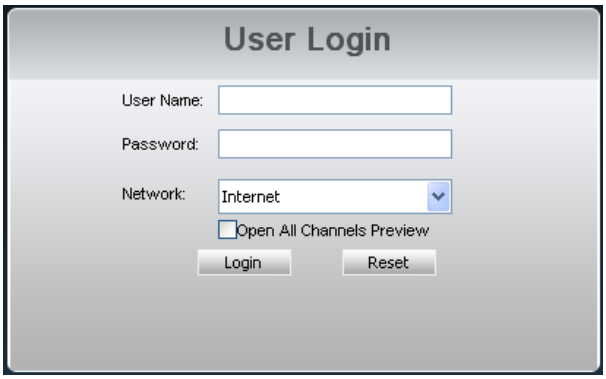
1. Click the (. . .) box next to the save path area and a folder browse screen will appear.
2. Find the area you want the files to be saved to and double click the area.
3. Select OK.
4. The file you want the footage/pictures saved to will appear in the box.
5. Select "apply" to save settings.

Save Path Settings

LOGOUT

Clicking on this tab logs you out of the online software and DVR viewing. When this tab is clicked the software will shut down, the screen will refresh and go to the initial user login.

User Login Screen



MOBILE VIEWING

This DVR is compatible with iPhone, BlackBerry, Windows Mobile and Symbian operating systems on 3G networks. Before you can access your DVR on a mobile phone you must make sure that the DVR has the proper network settings, has been port forwarded, and that you have the proper viewing software on your phone.

Set User name, password and port on DVR:

1. Go to Mobile setup on the DVR.
2. Insert the user name and password which a mobile user would use to access the DVR footage.
3. Insert a port for the mobile footage to run from. Port 1024 is a good default port to use. Make sure that you port forward this port on top of the other two ports.
4. Select "apply" to save your settings.

Port Forwarding:

Follow the port forwarding instructions found in the "port forwarding section" of the manual and use the port assigned in mobile viewing setup screen. **Be sure to forward the mobile port IN ADDITION to ports 80 and 9000.**

iPhone Viewing

Before viewing your DVR footage from your iPhone, please ensure that you have iTunes set up on your computer, an activated iTunes account and that you have port forwarded an extra port for mobile viewing.

From your computer or iPhone:

1. Open your iTunes program and access the iTunes store.
2. From the iTunes store, search "Asee".
3. The "Asee" application will then appear.
4. Click on the application, open the download page and then download "Asee".
5. The downloaded file will then be under your applications in your iTunes library.
6. Connect your iPhone to your computer.
7. Your iPhone will then be displayed under "Devices" to the left in the iTunes menu, open the device.
8. Open the applications menu from the top tab area and select "sync applications" and then select "Asee" to add the Asee application to your iPhone.
9. The Asee application will now appear on your iPhone screen.

From your iPhone:

1. Open and Run the Asee application.
2. Select the setup icon in the bottom right corner of the screen.
3. Fill in the following information:

Server IP: Input your DVR's IP address

Port: Input the port you forwarded for your mobile setup. Ensure that this port is also listed under mobile settings on your DVR

User ID: Input the user ID that you have set under the mobile settings on your DVR

Password: Input the password that you have set under the mobile settings on your DVR

4. Once all the proper information has been entered on your iPhone and on your DVR. Press the Back button in the top left corner of the iPhone screen.
5. Press the play button in the bottom left of the screen to start playing live footage from your DVR.
6. Fore more information on the Asee, please review the buttons and connections below.

BUTTONS AND CONNECTIONS

1. Viewing Screen
2. PTZ controls
3. Channel selection keys
4. Play & Pause
5. Snapshot
6. Full screen
7. Setup
8. Next group of channels (N/A for this DVR)
9. About ASee Button

Note: Although the viewing software is free, you must have an iTunes account to download it.

BlackBerry Viewing

Before viewing your DVR footage from your BlackBerry, please ensure that you have the blackberry desktop manager installed on your computer and you have port forwarded an extra port for mobile viewing.

From your computer:

1. Connect your BlackBerry to your computer and open up the BlackBerry desktop manager.
2. Select the "Application Loader" option from the main menu, from there, select the "Start" button for adding/ removing any applications to your BlackBerry.
3. Browse and select the Asee.alx file from the blackberry folder on the software CD and click "Next".
4. Once installed on your BlackBerry, select the "Finish" button to complete the installation.

From your BlackBerry:

1. The installed software will be located in the "Downloads" directory from the menu. From the downloads menu, select the Asee software icon to start the application.
2. Once the program has started, select the settings icon , from the settings screen, input the following information.

   Host: Input your DVR's IP address

   Port: Input the port you forwarded for your mobile setup. Ensure that this port is also listed under mobile settings on your DVR

   Host: Input your DVR's IP address

Port: Input the port you forwarded for your mobile setup. Ensure that this port is also listed under mobile settings on your DVR

User: Input the user ID that you have set under the mobile settings on your DVR

Password: Input the password that you have set under the mobile settings on your DVR

Default: Input the channel you would like to start watching - the program allows you to change channels once the footage has loaded

Wi-Fi: If connecting with mobile network select "No" for this option, if connection through a wireless network, select "Yes" for this option

3. Once you have input all the proper information, select "Save" to save the information and close the settings screen.
4. Once the settings screen is closed, select the play button to begin playing the footage.
5. For more information on Asee, see the buttons and their functions below.

1. Play
2. Camera Select
3. PTZ Controls
4. Settings Menu
5. Full Screen View

Android setup

Install viewing software to your phone's SD card, from your computer:

1. Connect phone to computer and open the memory card folder.
2. Insert included CD into drive and open up to view files.
3. Copy and paste the android viewing software onto the phone's memory card or installation folder.
4. Open the SD card folder on your Android phone and choose the Asee.apk file.
5. The file will install and be available from your main menu.

From your phone:

The easiest way to download and install the Asee application is directly from your Android phones marketplace. A wi-fi network or internet access must be available to your phone to download using this method.

1. Turn on the phone and enter the main menu.
2. Select the market icon, and select the search icon on the top right hand of the screen.
3. In the search field, type in Asee, the application will come up in the results, Asee is a free application.
4. Select the Asee application and press the install button on the bottom of the screen, the application will begin downloading and install automatically when the download is finished.
5. Once the application finishes installing there will be an option to Open the application, choose this option on the bottom of your screen.
6. From now on, the Asee application will be available from your main menu.

Market Main Screen

Search Screen

Windows Mobile setup

Install viewing software, from your computer:

1. Connect phone to computer and open the memory card folder.
2. Insert included CD into drive and open up to view files.
3. Copy and paste the viewing software onto the phone's memory card or installation folder.

From your phone:

1. Open up the area that the software was saved to.
2. Select Asee software to open. If prompted where to install the program, choose storage device.
3. Once a file location is selected, select install. The program will begin to install.
4. Once the program installs, run the Asee program from your applications. The main program screen will display.
5. Navigate to settings and press enter.
6. The following information needs to be inserted:

   User name: This is the user name you inserted for mobile settings on your DVR

   Password: This is the password you inserted for mobile settings on your DVR

   Server: This will be the IP address of the DVR

   Port: This will be the mobile port you forwarded and specified on the DVR to view mobile settings we recommend using port 1024

   Channel: This will be the camera you would like displayed when you view your DVR
7. Once the correct information has been inserted, select "OK" and a separate screen viewing your selected channel will appear.
8. The mobile software allows you to change channels, control a PTZ camera as well as capture a video.
9. If you capture a picture it will be stored in the same file location the program was installed.
10. You can convert normal display to full screen display by clicking the screen from on mobile device.

Symbian Mobile

From your computer:

1. Connect phone to computer and open the memory card or installation folder.
2. Insert included CD into drive and open up to view files.
3. Copy and paste the viewing software onto the phone's memory card folder.

From your mobile phone:

1. Open the file location, and open up the Asee.sis file. Note: Directions may vary on the type of phone that is being used. Refer to your phone instruction manual on how to access files from your mobile device.
2. The phone will begin preparation to install.
3. Once preparation is complete, the phone will request permission to install. Select "YES".
4. You will then be prompted to choose where you want the file to install (Phone memory or card memory, you can choose either location.)
5. Once you have selected where you would like to install the program, select "continue" and the program will install.
6. Once the program has installed, go to applications and open the program.
7. Upon opening the program, you will be prompted to insert the following information:

   Default access point: Choose the access point used to access the Internet

   Server address: Input the DVR's External IP address in this section

MOBILE VIEWING

Server Port: Insert the set port for the Mobile connection

User name: Insert the set user name, this was specified on the DVR, under mobile setup

Password: Insert the set password, this was specified with the user name, under mobile setup on the DVR

Channel: Select the channel you would like to view from the start up

8. Once all the proper information has been inserted select "Done" to save your settings and start viewing the mobile viewing software.
9. For a full screen view, select the footage being displayed.

Note: Directions may vary depending on the type of phone that is being used. Refer to your phone's instruction manual on how to access files from your mobile device.

DVR TROUBLESHOOTING

The cameras are not sequencing	• Check if you have sequence turned on under the camera menu options • You must initiate the sequencing to get it to start by right clicking and selecting start auto sequence from the sub menu. Then the cameras will sequence according to the sequence dwell time • You must be in live viewing mode
Nothing is recording but all the images are appearing on screen	• You must initiate the recording to start by pressing the record button • Check under Record Setup in the main menu to make sure all the cameras are set to 'ON' • Check your record schedule to make sure the DVR is set to record that present hour • Verify that the HDD is installed and formatted in the device menu
The camera picture is too dark	• Adjust the cameras brightness settings under Main Menu>Camera>Color • Try moving your camera to a brighter area • Make sure the camera is not pointing directly into a light source • If using at night, make sure subject is no more than 15ft away from camera. The LEDs need to reflect off an object to display an image • If using during the day, your camera may not be getting enough light on it. Adjust the sunshade (top of camera) to let more sun hit the camera
My night vision will not turn on/I can't see at night	• Night vision turns on automatically on the cameras when the sensor detects a lack of light. If your cameras are in a space with too much light, the night vision will not turn on • The night vision cameras are made to see 10-15 ft away in the dark. If you have the cameras in an open area the night vision will be reduced. The IR LEDs need to reflect off an object to display an image
I am prompted to put in a password for everything	• This is because you have the password enable set to ON in the system menu

DVR TROUBLESHOOTING

The browser keeps freezing/won't let me play the footage	• Make sure you have an up to date browser to view the footage with the proper ActiveX options • Make sure the browser is Internet Explorer, the software will not play on any other browser • Download all Windows Updates to make sure you have the latest version of Windows and Internet Explorer
Cannot power off DVR	• The DVR is set to run as long as it is plugged in. To power off the DVR disconnect the power cable
Playback video is choppy	• Check the FPS for each camera that is recording the choppy video. Refer to your settings in the main menu. The more FPS the smoother the video. If the FPS is set too low the video will appear choppy
The schedule is not recording properly to my set times	• Check to see if you have the proper time set on your DVR. Refer to the instruction manual under System → Date and Time (Pg. 35) • Double check your schedule record times – you may have it set on the no record function
There is a beeping noise whenever motion is detected	• Buzzer is set to on, go to the alarm set up and turn the buzzer function off
I cannot see (all/one) of the camera(s) on the monitor	• Check if the cameras are properly hooked up to the back of the DVR and to a power source • If using the 4 to 1 power connector, make sure it is plugged into a power source and each of the cameras • Check Camera Setup from the main menu to see if any of the cameras are turned off
I have lost video footage	• This could be from lost footage due to tampering of cameras. Make sure to check all connections are secure and set properly • This could be because HDD overwrite is enabled. This means that once the HDD is full the DVR will begin overwriting the earliest stored footage • Try unplugging the power to the cameras and/or DVR and plugging it back in
The hard drive is filling up too quickly	• Check the video quality you are using. If you are using a high video quality then the hard drive will fill up faster. Trying lowering the video quality • Adjust your schedule or resolution – If you are on Normal Record for 24 hours a day the hard drive will fill up faster. Try switching some times to alarm record
The video plays choppy when viewing live footage online	• When multiple people view the DVR at the same time, it slows the connection to the DVR. Try accessing the DVR at a later time • This could be due to the speed of your Internet connection. Check with your Internet service provider if the video seems to be choppy no matter when you check it • It is normal for there to be a small time delay between the camera live footage and the network viewing

DVR TROUBLESHOOTING

My DVR is connected to my router, and both devices have DHCP enabled, but my DVR will not acquire an IP address	• Check Ethernet connections, ensure that the connection lights are on (on router and back of DVR) • Try using a different Ethernet cable and/or a different port on your router
I can't see the online footage using my external IP address	• Sometimes your router will not allow you to view the footage with your external IP address because the DVR is hooked up to the same router. Try putting the DVR's internal IP address in the address bar and try to connect • See the network set up section for set up instructions • If using a Port other than 80 add it to the end of the IP address
Cannot view the DVR through a remote Internet connection	• Port Forwarding may not be set up correctly • The external IP address of the DVR may have changed. Try setting up the DDNS account to always be up to date with the latest IP information • The ISP may be blocking network traffic on Port 80. Try changing the HTTP port to 2000 and re-configure the port forwarding • Refer to the Network Setup Section of the manual for more troubleshooting and for detailed instructions on how to set up the DVR for remote viewing
Remote control is not working	• Make sure the batteries are installed correctly • Make sure you are pointing the remote at the IR sensor (on the top right side of DVR) • Point the IR Remote at the camera lens and press a button. You should be able to see the IR LED flicker through the DVR monitoring device • Try replacing the batteries in the remote
I plugged a mouse into the USB port but it's not working	• Make sure the mouse is connected to the proper USB port. The proper port for the mouse is the top USB port on the back. It will be labelled with a mouse icon next to it
The DVR keeps beeping at me	• There could be video loss, HDD loss, motion detection or no HDD space on your DVR. The SN301-8CH is set to alarm when those actions take place. This is to alert you if anything is tampering with the camera to DVR connections the alarm will go off. Check your connections and keep the DVR in a safe place where it will not me tampered with or moved around • Disconnect and reconnect all camera connections to make sure they are snug and tight fitting
The network settings on the DVR are not showing me any information	• Make sure the DVR is properly connected to the router. There should be green link indicator lights if the DVR is properly connected • Make sure the DVR IP Allocation is set to DHCP. This is a standard default setting that will work in most networking situations • Power cycle the DVR is it is properly connected and the IP Allocation is set to DHCP
The HDD light is blinking	• This is completely normal. If the hard drive is playing back footage or recording, the light will blink to notify you that there is activity

DVR SPECIFICATIONS

Video System	NTSC / PAL (Manual Switching)
Video Compression Format	H.264
Video Input (Composite Video Signal 1 Vp-p 75Ω BNC)	8 Channels
Video Loop Output (Composite Video Signal 1 Vp-p 75Ω BNC)	No
Video Output	Main Monitor Output: VGA Output 2x Composite Video Signal 1 Vp-p 75Ω BNC;Call Monitor Output: No
Recording Resolution	NTSC: CIF(352 X 240) PAL: CIF(352 X 288)
Recording Speed (Frame)	30 FPS per Camera (NTSC) / 25 FPS (PAL)
Multilingual OSD	English, Duetsch, Italiano, Russian, Francais, Espanol, Portugues, Polski
Image Quality Settings	Best, Good, Normal
Hard Disk Storage	500Gb SATA HDD
HDD Quick Cleaning	Quick clean up the "index system" of the recorded files
Recording Modes	Always/ Manual/ Time Schedule Record/ Motion
Refresh Rate	240 IPS for NTSC / 200 IPS for PAL
Triplex Operations	Recording, Playback, and Network Transmission
Remote Control Operation	Yes
Audio I/O	1 RCA Audio Input, 1 RCA Audio Output (Mono)
Motion Detection Area	15 x 10 grids per camera for all channels
Motion Detection Sensitivity	4 Adjustable variables with precise calculation for motion detection
Backup Device	USB 2.0 flash drive, network to avi, USB Burner
USB Interface	Back panel * 2 (Supports USB mouse, Removable HDD, USB Flash drive)
SATA Interface	Yes (Internal)
VGA Interface	Back panel * 1
Web Transmitting Compression Format	H.264
Network Connections	10/100 Base-T. Support remote control; Playback DVR HDD video and live view via Ethernet
Web Interface	Licensed software AP, IE browser
Remote Alarm Notification	Email Alerts
Network Protocol	TCP/IP, PPPoE, DHCP and DDNS, 3G
IR Receiver	Yes

DVR SPECIFICATIONS

PTZ Control	Yes (Pelco-D, Pelco-P)
Dwell Time (Sequential Channel Switch)	Programmable with adjustable dwell time (0-10 sec.)
Picture Zoom	2x digital zoom (live mode / playback mode)
Key Lock	Yes
Video Loss Detection	Yes
Camera Title	Supports up to 8 letters
Video Adjustable	Hue / Color / Contrast / Brightness
Date Display Formats	YY/MM/DD, DD/MM/YY, MM/DD/YY
Daylight Saving	Yes
Power Source	DC 12V %A
Power Consumption	<30 W
Operating Temperature	10ºC ~ 40ºC (50ºF ~ 104ºF)
Dimensions (mm)	315 (W) × 52 (H) × 224 (L)
System Recovery	System auto recovery after power failure
Weight	3.0 lbs

WHAT IS INCLUDED

4 x Indoor/Outdoor Night Vision CCD Color Cameras

2 Window Security Stickers

4 PIN DIN to RCA (male) Video/ Power Wire

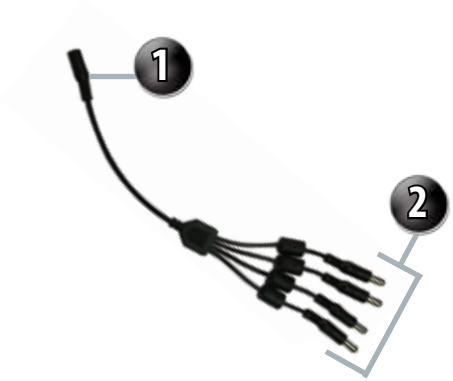
2 x 4 Port Power Supply for Cameras

- BNC to RCA Connector
- 1 Power Adapter for Camera
- Mounting Hardware
- Instruction Manual
- 1 Year Warranty
- Online/Toll Free Support

FEATURES

SP301-C Camera

1. Sun Shield:	Helps prevent glare from bright lights
2. Infrared (IR):	LEDs allow the camera to see in the dark up to 15ft away.
3. CDS Sensor:	Automatically turns on the infrared LEDs when it gets dark
4. Camera Housing:	Made of anodized aluminum to prevent rust
5. Camera Mount:	Allows the camera to be desk or wall mountable
6. 4 PIN DIN:	Connects to male RCA of extension cable



One to Four Power Supply Cable

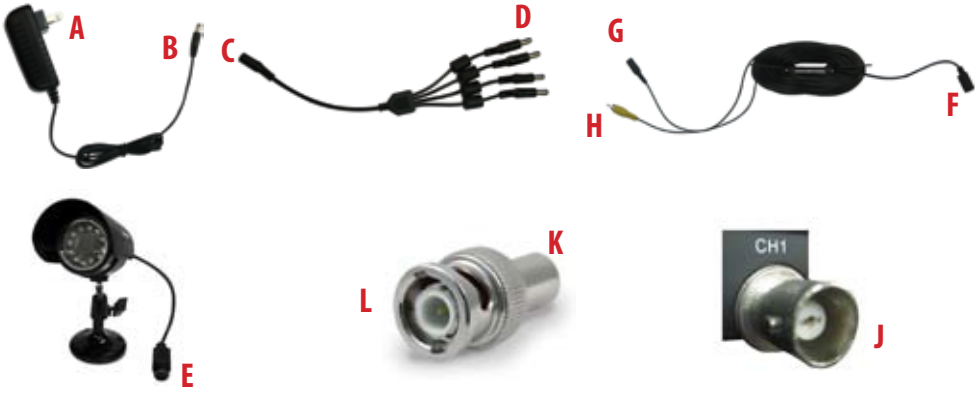
1. **Female 12V Connection**
2. **Camera Power Supply Ports**

The One to Four power Supply Cable allows you to plug four cameras into one power source, saving you time and space.

IMPORTANT INFORMATION

While this camera is weather resistant, it is not waterproof. Please do not install it in areas that receive direct rain or under eaves trough draining spots. Do not cut the DC power cable of this camera to fit with another power source. Do not cut the video connection wire to fit with a different video connection type. Any unauthorized modifications will void your warranty.

WIRING ADDENDUM



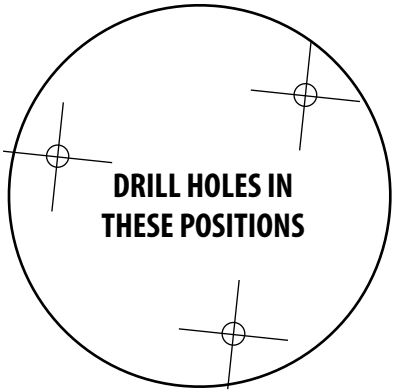
WIRING INSTRUCTIONS

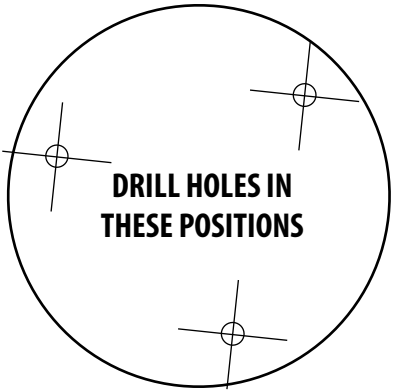
1. Plug 12V adapter **(A)** into electrical wall outlet or surge protecting power bar.
2. Plug the single end of the four port power supply **(C)** into the male end of the 12V adapter **(B)**.
3. Connect the 4PIN DIN female connection on the camera **(E)** into the 4PIN DIN male connection on the 60ft video power wire **(F)**.
4. Plug the power jack **(G)** from the 60ft video/power wire into one of the ports of the four port power supply **(D)**.
5. Attach the BNC to RCA connector **(L)** to the video inputs **(J)** on the back of the DVR.
6. Connect the yellow male RCA plug **(H)** from the 60 ft cable to the BNC to RCA **(K)** connector on your DVR.
7. Repeat the above steps for all of the included cameras.

DRILLING TEMPLATE

To wall mount the camera, drill three holes using a 3/16" drill bit and the template below. Insert the supplied wall anchors into holes and secure camera to wall with supplied screws.

.....Tear Here.....





CAMERA SPECIFICATIONS

Camera Type	Bullet
Image Sensor	1/4" Color CMOS
Resolution	400 TV Lines
Outdoor Use	Yes
IP Rating	IP55
Focal Length	6.0mm
Focus Type	Fixed
Night Vision	Yes
Number of IR LEDs (and Range)	11, up to 15ft
IR LED Control	Automatic (CDS Sensor)
Min. Illumination	0 lux
Video Output	60ft 4 PIN DIN to RCA (male) Video/Power Wire
TV System	NTSC
Microphone	No
Motion Detection	No
Viewing Angle	65 Degrees
Electronic Shutter	1/60 ~ 1/100000 sec
BLC	Yes
AGC	Automatic
ELC	Automatic
Sun Shield	Yes
IR Cut Filter	Yes
Housing Material	Metal
Housing Color	Midnight Black
Signal/Noise Ratio	>48dB
Camera Bracket	Yes
Operating Temperature	14°F ~ 122°F
Operating Humidity	95%
Camera Power Input	DC 12V 200mA
Power Adapter Input	120V 60Hz
LED Power Indicator	No
Dimensions	3 1/8" x 2" x 4 3/8"
Weight	0.6lbs (with stand)

CAMERA TROUBLESHOOTING

Before contacting technical support, please follow the troubleshooting tips below for solutions to common problems.

Email:
support@defender-usa.com

Toll free telephone:
1.866.946.7828

Toll free fax:
1.888.771.1701

Online live web chat:
Visit www.defender-usa.com

No picture/signal	• Make sure your TV/monitor is on the correct video input channel. This is NOT channel 3. Common terms for this channel is INPUT, AV CHANNEL, LINE 1, LINE 2 and AUX. Please use your TV or VCR manual to correctly identify this channel • If your camera is connected to a VCR/DVR, make sure that it is properly connected to your TV/monitor • Check all connections to make sure they are secure and properly connected • Check your power supply to ensure that the camera is powered up • Cup your hands around the front of the camera and look at the LEDs. They should be glowing red. If they are not, check the power supply
Picture is too bright	• Make sure your camera is not aimed at direct sunlight • Adjust the sunshade by sliding it forwards to block out excess light • Make sure nothing is obstructing the CDS sensor on the camera. If the CDS sensor is blocked, night vision mode will be active and may produce extra light in your camera's picture • Move your camera to another location
Picture is too dark	• If using at night, make sure your camera's subject is no more than 15ft away (may vary based on amount of ambient light available) • If using during the day, your camera may not be getting enough light. Adjust the sunshade by sliding it backwards to let in more light • Check the brightness and contrast settings on your TV/monitor • If your camera is connected to a VCR/DVR, check the brightness and contrast settings on the VCR/DVR • Move your camera to another location
Night Vision is not working	• The night vision turns on automatically when light levels drop. Try the camera in a pitch black setting. The area that it is in may have too much light and may not activate the sensor • Cup your hands around the front of the camera and look at the LEDs. They should be glowing red. If they are not, check the power supply

REPLACEMENT PARTS

If you accidentally damage or lose any parts they can be replaced with ease. The following are parts that came with your system and their reference model numbers so you can continue to effectively monitor your premises.

PRODUCT	MODEL#	DESCRIPTION
	DFW61	*4 PIN DIN Cable*
	ACC-BNC	*BNC to RCA Connector*
	ACC-SQUID-4T01	*Four-to-One Power Supply*
	SOFTWARE/ MANUALS	*Your product software and manual are available for download at:* ***http://www.defender-usa.com/downloads.php***

ADDITIONAL ACCESSORIES

You may wish to add to your system and upgrade some components of it. Here are some items that can boost the effectiveness of your video security system.

PRODUCT	MODEL#	DESCRIPTION
	DF10W	*Extend the range of your cameras with a 60ft extension.*
	SP301-C	*Upgrade your camera to a higher resolution and advanced UV filters for accurate and vibrant colours.*
	SP100-ST	*Alert all potential criminals of your security and help deter crime with a window sticker.*
	SGN100	*Alert all potential criminals of your security and help deter crime with this durable aluminum sign.*

For more information on additional accessories, parts and much more, please visit:

www.defender-usa.com

NOTES

DEFENDER™

VISIT US ON THE WEB!

- ▶ Product Information
- ▶ Specification Sheets
- ▶ User Manuals
- ▶ Software Updates
- ▶ Quick Start Guides
- ▶ Firmware Upgrades

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